DOCUMENT RESUME

ED 411 746 HE 030 521

AUTHOR	Choy, Susan P.; Geis, Sonya; Carroll, C. Dennis
TITLE	Early Labor Force Experiences and Debt Burden. Postsecondary Education Descriptive Analysis Reports. Statistical Analysis Report.
INSTITUTION	MPR Associates, Berkeley, CA.; National Center for Education Statistics (ED), Washington, DC.
REPORT NO	NCES-97-286
ISBN	ISBN-0-16-049179-7
PUB DATE	1997-08-00
NOTE	134p.
AVAILABLE FROM	U.S. Government Printing Office, Superintendent of Documents, Mail Stop: SSOP, Washington, DC 20402-9328.
PUB TYPE	Reports - Research (143)
EDRS PRICE	MF01/PC06 Plus Postage.
DESCRIPTORS	Bachelors Degrees; *College Graduates; College Outcomes Assessment; *Dropouts; *Employment; Employment Statistics; Financial Problems; Higher Education; Income; *Loan Repayment; Longitudinal Studies; Occupational Surveys; Outcomes of Education; *Student Financial Aid; Student Loan Programs; Unemployment; Work Experience
IDENTIFIERS	*Baccalaureate and Beyond Longitudinal Study (NCES); *Beginning Postsecondary Students Long Study

ABSTRACT

This study used data from the Baccalaureate and Beyond (B&B) and Beginning Postsecondary Student (BPS) studies to examine: the early labor force experiences of college students who either graduated or dropped out; student borrowing for postsecondary education; and student loan debt burden and repayment status. The B&B group (n=11,000) was followed one year after graduation in 1992-93. The nonbaccalaureates (n=8000) were those from the BPS group who enrolled in 1989-90 but did not graduate. Among the study's findings were: 87 percent of the graduates and 81 percent of the nonbaccalaureate group were employed in April of 1994; the average salary in 1994 was $22,100 for graduates and $16,600 for non-graduates; during the first year of graduation, about 29 percent of graduates had experienced unemployment, whereas among the nonbaccalaureate group, about one-third had experienced unemployment (since 1989); nearly one half of the graduates borrowed some money for their education--an average of $10,200; one year after graduating, 63 percent of bachelor's degree recipients had no debt; 29 percent of graduates were required to make loan payments, and the remaining 8 percent still owed but were not required to make payments; graduates were repaying on average of $136 per month, non-graduates an average of $76 per month. Appendixes include a glossary and technical notes on the methodology. (DM)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

SCOPE OF INTEREST NOTICE

The ERIC Facility has assigned this document for processing to: HE

In our judgment, this document is also of interest to the Clearinghouses noted to the right. Indexing should reflect their special points of view. CE

SCOPE OF INTEREST NOTICE

The ERIC Facility has assigned this document for processing to: HE

In our judgment, this document is also of interest to the Clearinghouses noted to the right. Indexing should reflect their special points of view. CE

ED 411 746

NATIONAL CENTER FOR EDUCATION STATISTICS

Statistical Analysis Report August 1997

Postsecondary Education Descriptive Analysis Reports

Early Labor Force Experiences and Debt Burden

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

● Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

HE 030 521

U.S. Department of Education
Office of Educational Research and Improvement NCES 97-286

BEST COPY AVAILABLE

NATIONAL CENTER FOR EDUCATION STATISTICS

Statistical Analysis Report August 1997

Postsecondary Education Descriptive Analysis Reports

Early Labor Force Experiences and Debt Burden

Susan P. Choy
Sonya Geis
MPR Associates, Inc.

C. Dennis Carroll, Project Officer
National Center for Education Statistics

U.S. Department of Education
Office of Educational Research and Improvement NCES 97-286

U.S. Department of Education
Richard W. Riley
Secretary

Office of Educational Research and Improvement
Ramon C. Cortines
Acting Assistant Secretary

National Center for Education Statistics
Pascal D. Forgione, Jr.
Commissioner

The National Center for Education Statistics (NCES) is the primary federal entity for collecting, analyzing, and reporting data related to education in the United States and other nations. It fulfills a congressional mandate to collect, collate, analyze, and report full and complete statistics on the condition of education in the United States; conduct and publish reports and specialized analyses of the meaning and significance of such statistics; assist state and local education agencies in improving their statistical systems; and review and report on education activities in foreign countries.

NCES activities are designed to address high priority education data needs; provide consistent, reliable, complete, and accurate indicators of education status and trends; and report timely, useful, and high quality data to the U.S. Department of Education, the Congress, the states, other education policymakers, practitioners, data users, and the general public.

We strive to make our products available in a variety of formats and in language that is appropriate to a variety of audiences. You, as our customer, are the best judge of our success in communicating information effectively. If you have any comments or suggestions about this or any other NCES product or report, we would like to hear from you. Please direct your comments to:

National Center for Education Statistics
Office of Educational Research and Improvement
U.S. Department of Education
555 New Jersey Avenue NW
Washington, DC 20208–5574

August 1997

The NCES World Wide Web Home Page address is
http://www.ed.gov/NCES/

Suggested Citation
U.S. Department of Education. National Center for Education Statistics. *Early Labor Force Experiences and Debt Burden,* NCES 97-286, by Susan P. Choy and Sonya Geis. Project Officer: C. Dennis Carroll. Washington, DC: 1997.

Contact:
Aurora D'Amico
(202) 219–1365

For sale by the U.S. Government Printing Office
Superintendent of Documents, Mail Stop: SSOP, Washington, DC 20402-9328
ISBN 0-16-049179-7

FOREWORD

This report describes the early labor force experiences and debt burden of two groups: 1992–93 bachelor's degree recipients and 1989–90 beginning postsecondary students whose last enrollment ended by December 1992. It begins with a description of their early labor force experiences, including such topics as the kinds of jobs they obtained, how much money they earned, and their experience with unemployment. The report then describes their borrowing for undergraduate education and its relationship to their career choices and, for bachelor's degree recipients, their plans for graduate school. Finally, the report examines their loan repayment status and the debt burden implied by their income and other aspects of their financial circumstances.

The report uses data from the Baccalaureate and Beyond Study (B&B:93/94) and the Beginning Postsecondary Student Longitudinal Study (BPS:90/94). B&B was derived from the National Postsecondary Student Aid Study conducted in 1992–93 (NPSAS:93), and included students who earned a bachelor's degree in 1992–93. This group was followed up in 1994, approximately one year after they graduated. BPS was derived from NPSAS:90, and included students who began postsecondary education for the first time in 1989–90. This group was followed up in 1992 and again in 1994.

The estimates presented in this report were produced using the B&B:93/94 and BPS:90/94 Data Analysis Systems (DASs). The DAS, a microcomputer application that allows users to specify and generate their own tables from the NPSAS, B&B, or BPS data, produces the design-adjusted standard errors that are necessary for testing the statistical significance of differences shown in the tables. For more information about the DAS and directions for obtaining access through the Internet, see appendix B of this report.

ACKNOWLEDGMENTS

The authors wish to thank all those who contributed to this report. At MPR Associates, Laura Horn and Lutz Berkner reviewed the analysis at various stages and provided helpful comments. Thanks also go to Barbara Kridl, who supervised the production of the report; Andrea Livingston and Karyn Madden, who edited it; Leslie Retallick, who prepared the graphics; and Mary Sukkestad and Don Eike, who formatted the tables and assembled the final report.

We would also like to acknowledge the careful review and thoughtful comments of the following reviewers: Dennis Carroll, Mary Frase, Robert Burton, Kristin Perry, and Joanell Porter at NCES; James Hyler and Alan Baldinger from the Department of Education's Budget Service; and Jerry Davis from the Student Loan Marketing Association (Sallie Mae).

HIGHLIGHTS

This report uses data from the Baccalaureate and Beyond (B&B) and Beginning Postsecondary Student (BPS) studies to examine the early labor force experiences of postsecondary education participants who graduated or left without a degree or certificate; their borrowing for postsecondary education; and, if they borrowed, their repayment status and the debt burden implied by their income and repayment obligations. The B&B data, collected in 1994, are used to examine the experiences of 1992–93 bachelor's degree recipients approximately one year after they graduated. The BPS data are used to track the experiences of another group of recent labor market entrants: individuals who began their postsecondary education in 1989–90 and whose last enrollment ended by December 1992. This group is referred to below as the "noncompleters and associate's degree or certificate recipients" or the "nonbaccalaureate group."

Employment/Unemployment

- The vast majority (87 percent) of 1992–93 bachelor's degree recipients were employed in April 1994 (table 7). About three-quarters (76 percent) were working only, and 11 percent were combining work and further education. The rest were enrolled for further education and not employed (7 percent) or neither working nor enrolled (6 percent).
- Eighty-one percent of the noncompleters and associate's degree or certificate recipients were employed in April 1994 (table 9). The rest were unemployed or out of the labor force.
- The average April 1994 annualized salary for the bachelor's degree recipients was $22,100 ($24,200 for those working full time); the average 1993 earnings for the nonbaccalaureate group were $16,600 (tables 13 and 14).
- Some experience with unemployment during the first year after graduation was not uncommon for bachelor's degree recipients: 29 percent had been unemployed for at least one month (table 15). Their April 1994 unemployment rate was 4.5 percent.
- Among the nonbaccalaureate group, about one-third had experienced some unemployment, but their unemployment was measured over a longer time period than the bachelor's degree recipients (since 1989) (table 16). The unemployment rate for this group in April 1994 was 4.7 percent.

Borrowing for Undergraduate Education

- About one-half (49 percent) of the 1992–93 bachelor's degree recipients borrowed from some source (including family or friends as well as through student loan programs) to finance their undergraduate education (table 18). Among those who borrowed, the average amount was $10,200. Graduates of private, not-for-profit institutions borrowed more, on average, than graduates of public institutions ($12,800 versus $8,700).
- Overall, 43 percent of the noncompleters and associate's degree or certificate recipients borrowed from some source for their postsecondary education, and 25 percent borrowed through student loan programs (table 19). The average amount borrowed through student loan programs was $4,200. For students who last attended a public 2-year institution, the borrowing rate through student loan programs was 10 percent and the average amount borrowed was $2,700.
- Bachelor's degree recipients' immediate career plans appear unrelated to borrowing, but borrowing may be an obstacle to immediate enrollment in graduate school (tables 22–28).

Loan Repayment and Debt Burden

- About one year after graduating, 63 percent of bachelor's degree recipients had no undergraduate debt, either because they had never borrowed or because they had repaid their loans; 29 percent were required to make loan payments; and the remaining 8 percent still owed money but were not required to make payments in 1994 (table 29).
- Among the noncompleters and associate's degree or certificate recipients, 16 percent were making payments (table 30).
- For 1992–93 bachelor's degree recipients who were repaying their loans in 1994, the average monthly payment was $136, which averaged 9 percent of their April 1994 salary (tables 31 and 33). Thirty-one percent of those in repayment were paying less than 5 percent of their monthly income; 38 percent were paying 5 to 9 percent; 15 percent were paying 10 to 14 percent; and 16 percent were paying 15 percent or more (table 33). Those with the lowest salaries (less than $15,000) had the greatest average debt burden (15 percent).
- Bachelor's degree recipients whose debt burden exceeded 15 percent were more likely than those with debt burdens of under 5 percent to be living with parents or relatives (table 38).
- The nonbaccalaureate group were less burdened with debt. Their monthly payments averaged $76, and three-quarters had monthly payments amounting to less than 10 percent of their monthly income (tables 32 and 34). The average was 8 percent.

TABLE OF CONTENTS

Page

Foreword iii
Acknowledgments iv
Highlights v
List of Tables ix
List of Figures xiv

Introduction 1
  Background 1
  Data 3
  1992–93 Bachelor's Degree Recipients 4
  1989–90 Beginning Postsecondary Students 6
  Implications of Recent Increases in Borrowing for This Analysis 11

Early Labor Force Experiences 15
  Employment 15
  Occupations 23
  Earnings 27
  Experience With Unemployment 39

Borrowing for Undergraduate Education 49
  Amounts Borrowed 49
  Amounts Owed by Borrowers in 1994 55
  Borrowing and Career Choices 58
  Borrowing and Plans for Graduate School 61

Loan Repayment and Debt Burden 65
  Repayment Status 65
  Payment Amounts 69
  Loan Payments as a Percentage of Monthly Earnings 72
  Other Indicators of Debt Burden for Bachelor's Degree Recipients 77
  Borrowing and Lifestyle Choices 79

Page

Summary and Conclusion 85
1992–93 Bachelor's Degree Recipients 85
1989–90 Beginning Postsecondary Students Whose Last Enrollment Ended by December 1992 86

Appendix A—Glossary 89

Appendix B—Technical Notes and Methodology 107

LIST OF TABLES

Table **Page**

1 Percentage distribution of 1992–93 bachelor's degree recipients according to type of degree-granting institution, by gender and race–ethnicity 5

2 Percentage distribution of 1992–93 bachelor's degree recipients according to gender and race–ethnicity, by type of institution 5

3 Percentage distribution of all 1989–90 beginning postsecondary students according to highest degree attained by spring 1994, by gender and race–ethnicity 7

4 Percentage distribution of 1989–90 beginning postsecondary students whose last enrollment ended by December 1992 according to last institution attended, by highest degree attained as of spring 1994 8

5 Percentage distributions of 1989–90 beginning postsecondary students according to selected characteristics for all students, students included in the analysis, and students not included in the analysis for this report 9

6 Percentage distribution of students participating in federal student loan programs with any loans in 1992–93 and federal loans in 1995–96 according to total amount borrowed and average amount borrowed for undergraduate education 12

7 Percentage of 1992–93 bachelor's degree recipients who were employed and enrolled and percentage distribution according to enrollment and employment status in April 1994, by selected student and institutional characteristics 17

8 Percentage distribution of 1992–93 bachelor's degree recipients according to employment status in April 1994, by selected student characteristics 19

9 Percentage distribution of 1989–90 beginning postsecondary students whose last enrollment ended by December 1992 according to employment status in April 1994, by selected student and institutional characteristics 20

10 Percentage distribution of employed 1992–93 bachelor's degree recipients according to April 1994 occupation, by selected student and institutional characteristics 24

Table **Page**

11 Percentage of 1992–93 bachelor's degree recipients employed full time who found their April 1994 job in various ways, by selected student characteristics 26

12 Percentage distribution of employed 1989–90 beginning postsecondary students whose last enrollment ended by December 1992 according to 1993 occupation, by selected student and institutional characteristics 28

13 Percentage distribution of 1992–93 bachelor's degree recipients who were employed in April 1994 according to annualized salary from primary April 1994 job and average annualized salary, by selected student and institutional characteristics 30

14 Percentage distribution of 1989–90 beginning postsecondary students whose last enrollment ended by December 1992 according to 1993 earned income and average earned income, by selected student and institutional characteristics 35

15 Percentage distribution of 1992–93 bachelor's degree recipients according to number of months unemployed since graduating, percentage with any unemployment spells since graduating, and percentage unemployed in April 1994, by selected student and institutional characteristics 40

16 Percentage of 1989–90 beginning postsecondary students whose last enrollment ended by December 1992 who had ever been unemployed in 1989–94, and among those, the average duration of unemployment spells and the average total number of months unemployed and the percent unemployed in April 1994, by selected student and institutional characteristics 41

17 Percentage distribution of 1989–90 beginning postsecondary students whose last enrollment ended by December 1992 according to the number of months after leaving postsecondary education before obtaining first principal job, by selected student and institutional characteristics 45

18 Percentage of 1992–93 bachelor's degree recipients who borrowed for undergraduate education, average amounts borrowed, and percentage distribution of those who borrowed by amount borrowed, by selected student and institutional characteristics 51

19 Percentage of 1989–90 beginning postsecondary students whose last enrollment ended by December 1992 who borrowed for undergraduate education, who took out student loans, and average amount of student loans, by selected student and institutional characteristics 54

Table		Page
20	Percentage distribution of 1992–93 bachelor's degree recipients who borrowed according to the amount still owed for their undergraduate education and average amount owed by those who still owed, by selected student and institutional characteristics: 1994	56
21	Percentage distribution of 1989–90 beginning postsecondary students whose last enrollment ended by December 1992 and who borrowed according to the amount still owed, and average amount owed, by selected characteristics: 1994	57
22	Percentage of 1992–93 bachelor's degree recipients who reported that various factors were important to them in determining the type of work they planned to do in the future, by borrowing status and amount borrowed for undergraduate education: 1994	59
23	Percentage distribution of 1992–93 bachelor's degree recipients by relationship between April 1994 job and degree, by borrowing status and amount borrowed for undergraduate education	59
24	Of 1992–93 bachelor's degree recipients whose April 1994 job was not at all related to their degree, percentage who gave various reasons for taking that job	60
25	Percentage distribution of 1989–90 beginning postsecondary students whose last enrollment ended by December 1992 according to importance of job security and permanence in determining the kind of work they planned to be doing for most of their lives: 1994	60
26	Percentage of 1992–93 bachelor's degree recipients who applied to graduate or professional school, the percentage accepted among those who applied, and the percentage who considered applying among those who did not apply, by amount borrowed and GPA: 1994	61
27	Percentage of 1992–93 bachelor's degree recipients who had considered applying to graduate school but did not apply who gave various reasons as the primary reason for not applying, by borrowing status and amount borrowed for undergraduate education: 1994	62
28	Percentage of 1992–93 bachelor's degree recipients who were enrolled for further education in April 1994, and the adjusted percentage after taking into account the covariation of the variables listed in the table	64
29	Percentage distribution of 1992–93 bachelor's degree recipients according to monthly loan payment status, by enrollment status: 1994	67

Table **Page**

30 Percentage distribution of 1989–90 beginning postsecondary students whose last enrollment ended by December 1992 according to student loan repayment status and percentage of those making payments who were receiving help with the payments, by selected student characteristics: 1994 68

31 Percentage distribution of 1992–93 bachelor's degree recipients in repayment according to monthly education loan payments and average amount of payment, by selected student and institutional characteristics: 1994 70

32 Percentage distribution of 1989–90 beginning postsecondary students whose last enrollment ended by December 1992 who were in repayment according to monthly student loan payments and average amount of payment, by selected student and institutional characteristics: 1994 72

33 Percentage distribution of 1992–93 bachelor's degree recipients making monthly education loan payments according to their monthly payment as a percent of their April 1994 salary, and average percent, by selected student and institutional characteristics: 1994 74

34 Percentage distribution of 1989–90 beginning postsecondary students whose last enrollment ended by December 1992 making payments on student loans according to their monthly payment as a percentage of estimated monthly earnings and average burden, by selected student and institutional characteristics: 1994 77

35 Percentage distribution of 1992–93 bachelor's degree recipients according to monthly payments for selected noneducational expenses (mortgage, rent, auto loans, and other debt), and average amount paid, by selected student characteristics: 1994 79

36 Percentage distribution of 1992–93 bachelor's degree recipients according to marital status in April 1994 and percentage who married between 1993 and 1994 80

37 Percentage distribution of 1992–93 bachelor's degree recipients according to where they were living in April 1994, by selected student characteristics 82

38 Percentage of 1992–93 bachelor's degree recipients working full time in April 1994 who were saving money and the percentage saving for various reasons, by selected student characteristics: 1994 84

Table **Page**

B.1 Percentage distributions of 1992–93 bachelor's degree recipients by selected student characteristics: 1994 110

B.2 Percentage distributions of 1989–90 beginning postsecondary students whose last enrollment ended by December 1992 according to selected student characteristics: 1994 111

B.3 Standard errors for table 7: Percentage of 1992–93 bachelor's degree recipients who were employed and enrolled and percentage distribution according to enrollment and employment status in April 1994, by selected student and institutional characteristics 113

B.4 Standard errors for table 9: Percentage distribution of 1989–90 beginning postsecondary students who left postsecondary education or attained an associate's degree or certificate by December 1992 according to employment status in April 1994, by selected student and institutional characteristics 114

LIST OF FIGURES

Figure **Page**

1 Percentage distribution of 1989–90 beginning postsecondary students according to highest degree earned, by date of last enrollment: Spring 1994 6

2 Percentage distribution of 1989–90 beginning postsecondary students according to the year their last spell of enrollment ended by 1994 degree status and, for noncompleters, initial degree objective 10

3 Percentage distribution of 1992–93 bachelor's degree recipients according to work and enrollment status in April 1994.. 16

4 Percentage of 1989–90 beginning postsecondary students whose last enrollment ended by December 1992 who were employed in April 1994, by selected student and institutional characteristics 22

5 Average April 1994 salary of 1992–93 bachelor's degree recipients employed full time, by undergraduate major 33

6 Average 1993 earned income from all jobs of 1989–90 beginning postsecondary students whose last enrollment ended by December 1992, by primary 1993 occupation.. 37

7 Percentage distribution of 1992–93 bachelor's degree recipients who borrowed for their undergraduate education and average amount borrowed, by time to complete degree.. 50

8 Percentage of 1989–90 beginning postsecondary students whose last enrollment ended by December 1992 who took out loans, by last institution attended and source of loan.. 53

9 Percentage distribution of 1992–93 bachelor's degree recipients according to repayment status in 1994.. 66

10 Percentage distribution of 1992–93 bachelor's degree recipients making payments on undergraduate loans according to amount of monthly payment in 1994........................ 70

Figure **Page**

11 Percentage distribution of 1989–90 beginning postsecondary students whose enrollment ended by December 1992 and were making payments on student loans according to amount of monthly payment in spring 1994 71

12 Percentage distribution of 1992–93 bachelor's degree recipients making education loan payments according to their monthly payment as a percent of their April 1994 income 75

13 Percentage distribution of 1989–90 beginning postsecondary students whose enrollment ended by December 1992 and were making payments on student loans according to their monthly student loan payment as a percent of monthly earnings 76

INTRODUCTION

While students enroll in postsecondary education for many reasons, most expect earning a degree or certificate to give them an advantage in the labor market in terms of their employability and salary, both immediately and in the long run. Because postsecondary students invest a considerable amount of time and money to obtain these credentials, it is important to learn about their labor market experiences after they graduate or when they leave without graduating. What kinds of jobs do they get? How much money do they earn? What are their experiences with unemployment? If they have borrowed to finance their education, what are the financial and other implications of this borrowing after they leave postsecondary education? Can they afford to pay back their loans without undue hardship? How does borrowing affect their further education and lifestyle choices? These questions are addressed in this report.

BACKGROUND

The questions related to borrowing and debt burden have become particularly pressing in light of recent dramatic increases in borrowing. Over the past two decades, borrowing has become an increasingly common way for undergraduates to finance their education. In 1990–91, for example, 65 percent of federal grant, loan, and work-study aid was awarded in the form of loans, compared with 39 percent 20 years earlier.[1] In the 1992–93 academic year, borrowing through the Federal Family Education Loan (FFEL) program totaled $14.9 billion.[2] With the introduction of unsubsidized Stafford loans for students not meeting the need criteria for subsidized loans, higher maximum loan limits, and changes in need analysis authorized by the Higher Education Amendments of 1992, borrowing grew suddenly and dramatically. In the 1993–94 academic year, the FFEL loan volume was $19.0 billion. In 1994–95 and 1995–96, federal loan volumes (which then included Ford Direct loans as well as FFEL loans) continued to increase, to $22.3 billion and then $24.4 billion.[3]

---

[1] Laura Greene Knapp, *Borrowing for College in 1989–90* (Washington, DC: The College Board, 1992), 1.

[2] The College Board, *Trends in Student Aid: 1986 to 1996* (Washington, DC: The College Board, 1996).

[3] U.S. Department of Education, Budget Services, table prepared for the FY 1998 President's Budget. Loan volumes refer to net commitments (loans actually dispersed) and exclude consolidated loans.

How much debt is too much? This question has been debated by legislators, policymakers, and members of the postsecondary community for more than a decade.[4] Without disputing the fact that loans provide students who otherwise would not have the resources to go to college a way to invest in their future, much concern has been expressed about student debt levels and whether the growing dependence on loans is creating serious problems for the borrowers and for society. One set of concerns centers on whether students are in danger of defaulting, a situation that has financial consequences for the students themselves, the institutions they attend, and the loan programs through which they have borrowed. A second set of concerns relates to the possibility that the prospect of borrowing and heavy debt may discourage students (especially minorities and others who are traditionally underserved) from enrolling in postsecondary education or cause them to drop out before they reach their educational goals. A third set of concerns focuses on how debt affects students' postgraduation plans. That is, does it prevent them from continuing their education to the next level, entering a field that is socially beneficial but not necessarily well paying (such as teaching), or buying a home or car or forming a family at approximately the same time as their peers without education loans to repay?

This report uses data collected by the National Center for Education Statistics (NCES) to examine the experiences of postsecondary education participants who have recently graduated or dropped out. The rest of this section describes the data and the characteristics of the groups included in the analysis. The next section describes their early labor force experiences, including how many were working, their occupations, their earnings, and their experience with unemployment. This is followed by a description of their borrowing and its impact on their career choices and plans for graduate school. The next section addresses loan repayment and the debt burden implied by borrowers' current income and repayment obligations and reported information about other aspects of their financial circumstances. A conclusion summarizes the major findings. Appendix A contains a glossary describing each of the variables used in the analysis, and appendix B provides details on the data and methodologies used.

---

[4] See, for example, Janet S. Hansen, *Student Loans: Are They Overburdening a Generation?* (New York: College Entrance Examination Board, 1987); W. Lee Hansen and Marilyn S. Rhodes, "Student Debt Crisis: Are Students Incurring Excessive Debt?" *Economics of Education Review* 7 (1), 1988, 101–112; and Keith Greiner, "How Much Student Loan Debt Is Too Much?" *Journal of Student Financial Aid* 26 (1), 1996, 7–16.

DATA

The analysis uses the Baccalaureate and Beyond Longitudinal Study (B&B) and the Beginning Postsecondary Student Longitudinal Study (BPS). Both of these studies were derived from the National Postsecondary Student Aid Study (NPSAS), a comprehensive, nationwide study of students enrolled in all types of postsecondary institutions. To this date, four administrations of NPSAS have been completed (1986–87, 1989–90, 1992–93, and 1995–96).

B&B provides information on the education and work experiences of approximately 11,000 NPSAS:93 participants who received a bachelor's degree during the 1992–93 academic year (July 1992 through June 1993). The analysis for this report is based on information collected through NPSAS:93 and the B&B First Followup (B&B:93/94), which was conducted in 1994. BPS provides information on the experiences of 8,000 students in NPSAS:89 who entered postsecondary education for the first time in 1989–90; this group was followed up in the spring of 1992 (BPS:90/92) and again in the spring of 1994 (BPS:90/94). Appendix B contains additional information on NPSAS, B&B, and BPS.

For the analysis of the BPS data, the sample was limited to individuals whose last spell of enrollment ended no later than December 1992 (approximately three and a half years after they started). The sample was limited in this way because studying debt burden requires information on both monthly loan payments and monthly income. BPS survey respondents were asked to report the amount of their monthly loan payments in the spring of 1994, but only their annual (rather than monthly) incomes. The last year for which individuals were asked to provide income data was 1993. Although dividing respondents' 1993 annual income by 12 provides a credible estimate of their monthly income in spring 1994, an accurate picture of debt burden can be obtained only if the income data apply to a period after students have graduated or dropped out. For this reason, only students whose last spell of enrollment ended before January 1993 were included in the analysis described in this report.

Bachelor's degree recipients were excluded from the analysis of the BPS data, because all except those who finished in less than four years (5 percent of the bachelor's degree recipients[5]) would have still been enrolled in 1993. Since the number of 1989–90 beginning postsecondary students who finished a bachelor's degree in less than four years was relatively small, and to avoid confusion between the different B&B and BPS bachelor's degree populations, bachelor's degree *recipients* were excluded from the parts of the analysis that used the BPS data. However, bachelor's degree *seekers* who dropped out before January 1993 and did not return were included.

---

[5] U.S. Department of Education, National Center for Education Statistics, 1990 Beginning Postsecondary Students Longitudinal Study—Second Follow-up (BPS:90/94), Data Analysis System.

Where possible, this analysis uses B&B:93/94 and BPS:90/94 to answer similar questions about the early labor force experiences of recent graduates with different types of awards, their borrowing as undergraduates, and the financial implications of that borrowing. However, these two studies have different orientations: B&B:93/94 focuses on the experiences of bachelor's degree recipients during the first year after they graduate, while BPS:90/94 focuses on their persistence, progress, and attainment from when they initially entered postsecondary education. Consequently, the questions asked of survey participants differed, and direct comparisons of their experiences were not always possible.

1992–93 BACHELOR'S DEGREE RECIPIENTS

In the 1992–93 academic year, 1.2 million individuals earned a bachelor's degree in the United States.[6] About two-thirds of them (65 percent) received their degree from a public institution (table 1). Slightly more than half were female in both public and private, not-for-profit institutions (table 2). Eighty-three percent were white, non-Hispanic. Black, non-Hispanics; Hispanics; and Asian/Pacific Islanders accounted for another 5 to 6 percent each, and the remaining 1 percent were American Indian/Alaskan Natives.[7] Table B.1 (appendix B) shows the percentage distribution of 1992–93 bachelor's degree recipients according to various characteristics.

---

[6] U.S. Department of Education, National Center for Education Statistics, 1993 Baccalaureate and Beyond Longitudinal Study First Followup (B&B:93/94), Data Analysis System.

[7] See U.S. Department of Education, National Center for Education Statistics, *A Descriptive Summary of 1992–93 Bachelor's Degree Recipients 1 Year Later*, NCES 96-158, by Alexander C. McCormick and Laura J. Horn, Paula Knepper, project officer (Washington, DC: 1966), for more information on the 1992–93 bachelor's degree recipients.

Table 1—Percentage distribution of 1992–93 bachelor's degree recipients according to type of degree-granting institution, by gender and race–ethnicity

	Public 4-year	Private, not-for-profit 4-year	Other*
Total	65.2	31.4	3.5
Gender			
Male	66.2	30.1	3.6
Female	64.3	32.4	3.3
Race–ethnicity			
American Indian/Alaskan Native	81.8	12.1	6.1
Asian/Pacific Islander	62.8	25.4	11.8
Black, non-Hispanic	59.3	37.6	3.1
Hispanic	66.2	30.6	3.2
White, non-Hispanic	65.6	31.4	3.0

*Primarily for-profit 4-year institutions.

NOTE: Percentages may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1993 Baccalaureate and Beyond Longitudinal Study First Followup (B&B:93/94), Data Analysis System.

Table 2—Percentage distribution of 1992–93 bachelor's degree recipients according to gender and race–ethnicity, by type of institution

	Gender		Race–ethnicity				
	Male	Female	American Indian/ Alaskan Native	Asian/ Pacific Islander	Black, non-Hispanic	Hispanic	White, non-Hispanic
Total	45.3	54.7	0.6	4.9	6.1	5.1	83.3
Degree-granting institution							
Public 4-year	46.1	53.9	0.7	4.7	5.6	5.2	83.9
Private, not-for-profit 4-year	43.6	56.4	0.2	4.0	7.4	5.0	83.5
Other	47.6	52.4	1.0	16.6	5.5	4.7	72.2

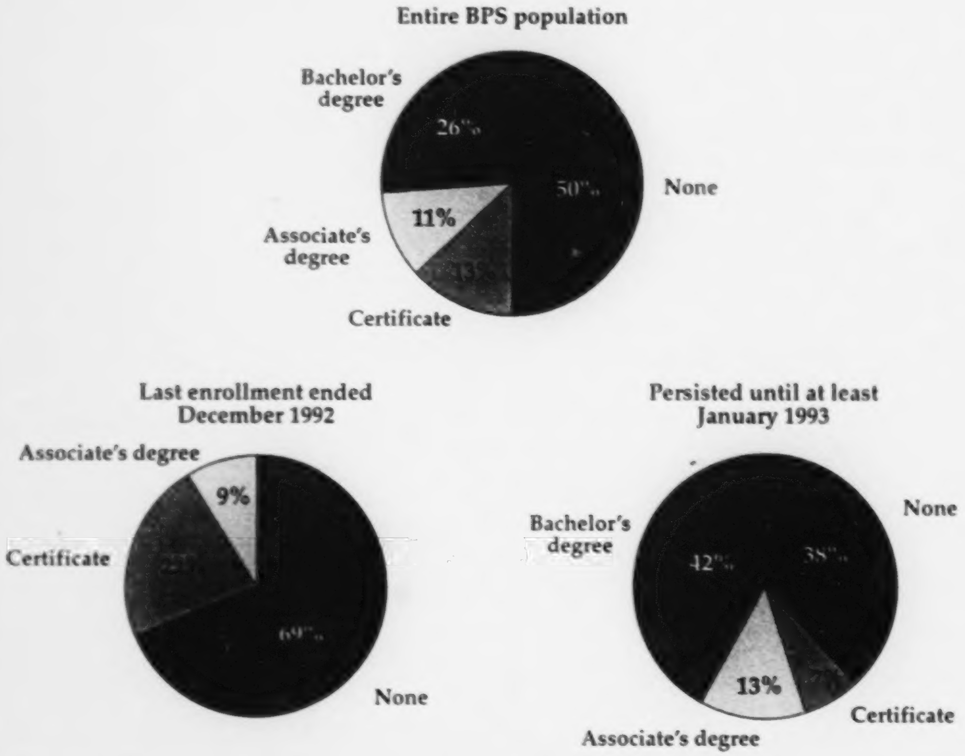
NOTE: Percentages may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1993 Baccalaureate and Beyond Longitudinal Study First Followup (B&B:93/94), Data Analysis System.

1989–90 BEGINNING POSTSECONDARY STUDENTS

Among all those who began their postsecondary education in 1989–90, 26 percent had earned a bachelor's degree by spring 1994—that is, within five academic years of the time they were first enrolled (figure 1 and table 3). Another 11 percent had earned an associate's degree, and 13 percent had earned a certificate. The remaining half had not earned any award by this

Figure 1—Percentage distribution of 1989–90 beginning postsecondary students according to highest degree earned, by date last enrolled: Spring 1994



SOURCE: U.S. Department of Education, National Center for Education Statistics, 1990 Beginning Postsecondary Students Longitudinal Study—Second Follow-up (BPS:90/94), Data Analysis System.

Table 3—Percentage distribution of all 1989–90 beginning postsecondary students according to highest degree attained by spring 1994, by gender and race–ethnicity

	None	Certificate	Associate's degree	Bachelor's degree
Total	50.0	12.5	11.4	26.1
Gender				
Male	54.3	11.0	10.5	24.3
Female	46.4	13.8	12.2	27.7
Race–ethnicity				
American Indian/Alaskan Native	48.7	20.2	9.4	21.6
Asian/Pacific Islander	38.8	9.5	9.8	41.9
Black, non-Hispanic	57.5	15.8	9.4	17.4
Hispanic	55.1	15.8	11.4	17.7
White, non-Hispanic	49.3	11.9	11.7	27.1

NOTE: Percentages may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1990 Beginning Postsecondary Students Longitudinal Study—Second Follow-up (BPS:90/94), Data Analysis System.

time.[8] The group selected for analysis for this report was naturally quite different in terms of attainment because it excluded anyone who was enrolled after December 1992. Among the analysis group, 69 percent were nonattainers as of 1994, 22 percent were certificate recipients, and 9 percent were associate's degree recipients (figure 1). Of the nonattainers, 62 percent had last attended a public 2-year institution (table 4). To place the analysis group in the context of the entire BPS population, table 5 shows selected characteristics of the entire BPS population, those included in the analysis, and those not included. Compared with other beginning postsecondary students, those in the analysis group were more likely to be 20 years or older when they began postsecondary education, to be black, non-Hispanic, and to have last attended a public 2-year or private, for-profit institution.

Overall, the analysis group represents 43 percent of the BPS population. Figure 2 shows, for each group of attainers and for nonattainers, what proportion were in the analysis group. The analysis group includes 72 percent of all beginning postsecondary students who received certificates by 1994. About 60 percent of all those who received certificates did so within two years of beginning their postsecondary education. The analysis group does not include as great a proportion of associate's degree recipients, however: 34 percent. The other 66 percent either finished in 1993 or 1994 or continued on at another institution after earning their associate's degree. The analysis group includes 59 percent of the 1989–90 beginning postsecondary students who had not received any type of award by spring 1994—that is, those who had dropped out before January 1993 and had not returned by the spring of 1994. Table B.2 (appendix B) shows the percentage distribution of the analysis group according to selected characteristics.

---

[8] See U.S. Department of Education, National Center for Education Statistics, *Descriptive Summary of 1989–90 Beginning Postsecondary Students: 5 Years Later*, NCES 96-155, by Lutz K. Berkner, Stephanie Cuccaro-Alamin, and Alexander C. McCormick. Larry Bobbitt, project officer (Washington, DC: 1996), for more information on the 1989–90 beginning postsecondary students.

Table 4—Percentage distribution of 1989–90 beginning postsecondary students whose last enrollment ended by December 1992 according to last institution attended, by highest degree attained as of spring 1994

	Public 4-year	Private, not-for-profit 4-year	Public 2-year	Private, for-profit	Other
Total	14.0	3.8	53.0	21.8	6.6
Highest degree attained by spring 1994					
None	17.7	4.8	61.7	11.8	4.1
Certificate	2.6	0.7	26.9	55.4	14.3
Associate's degree	12.7	3.7	57.2	18.5	8.0

NOTE: Percentages may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1990 Beginning Postsecondary Students Longitudinal Study—Second Follow-up (BPS:90/94), Data Analysis System.

Table 5—Percentage distributions of 1989–90 beginning postsecondary students according to selected characteristics for all students, students included in the analysis, and students not included in the analysis for this report

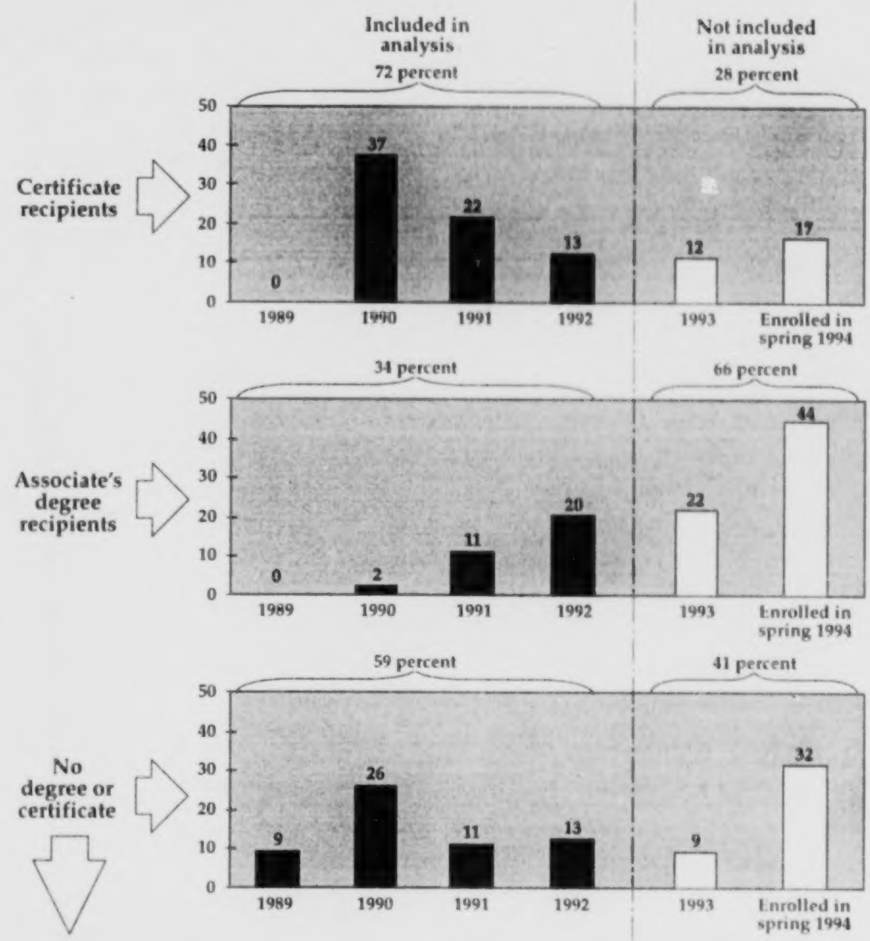
	All BPS students	Included in analysis[1]	Not included in analysis[2]
Total	100.0	100.0	100.0
Gender			
Male	46.0	45.3	46.5
Female	54.0	54.7	53.5
Race–ethnicity			
American Indian/Alaskan Native	0.7	0.6	0.8
Asian/Pacific Islander	4.0	2.6	4.9
Black, non-Hispanic	8.8	11.7	7.0
Hispanic	7.6	8.4	7.1
White, non-Hispanic	78.8	76.6	80.2
Age when began postsecondary education			
19 or younger	73.3	55.7	86.4
20 or older	26.7	44.3	13.6
Level and control of last institution			
Public 4-year	34.6	14.0	49.9
Private, not-for-profit 4-year	13.1	3.8	20.1
Public 2-year	37.4	53.8	25.1
Private, for-profit	11.5	21.8	3.8
Other	3.4	6.6	1.1
Highest degree attained by spring 1994			
None	50.0	69.4	38.1
Not enrolled April 1994	35.9	100.0	18.2
Enrolled April 1994	14.1	0.0	19.9
Certificate	12.5	21.7	6.7
Associate's degree	11.4	8.9	12.9
Bachelor's degree	26.1	0.0	42.3

[1] Students whose last enrollment ended by December 1992.

[2] Students who persist until at least January 1993.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1990 Beginning Postsecondary Students Longitudinal Study—Second Follow-up (BPS:90/94), Data Analysis System.

Figure 2—Percentage distribution of 1989–90 beginning postsecondary students according to the year their last spell of enrollment ended by 1994 degree status and, for noncompleters, initial degree objective



INITIAL DEGREE OBJECTIVE	1989	1990	1991	1992	1993	Spring 1994
Associate's degree at 2-year	8	33	14	15	5	26
Bachelor's degree at 2-year	2	14	14	16	12	42
Bachelor's degree at 4-year	2	12	8	14	16	48
Certificate at private, for-profit	19	53	10	7	4	7
Certificate at public 2-year	23	43	11	6	5	12
Other	11	42	9	9	8	21

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1990 Beginning Postsecondary Students Longitudinal Study—Second Follow-up (BPS:90/94), Data Analysis System.

BEST COPY AVAILABLE

IMPLICATIONS OF RECENT INCREASES IN BORROWING FOR THIS ANALYSIS

Unfortunately, the impact of the dramatic increase in borrowing that started in 1993–94 is not captured in this analysis of the B&B:93/94 and BPS:90/94 data, because the students included in the analysis had either graduated or left school by then. To get some idea of how cumulative borrowing for bachelor's degree recipients has changed with the recent aggregate increases in loan volume, the cumulative borrowing of the 1992–93 bachelor's degree recipients was compared to the cumulative borrowing of the 1995–96 fourth- and fifth-year seniors (assuming they would be the 1995–96 graduates). Because the student-reported data for NPSAS:96 are not yet available, it is not possible to determine how the percentage of students who borrowed changed between 1992–93 and 1995–96. However, it is possible to examine changes in the average amounts borrowed by students who participated in federal student loan programs (which most borrowers do).

The 1992–93 bachelor's degree recipients who graduated from public 4-year institutions and who participated in a federal student loan program borrowed an average of $10,100 from *all sources* (federal, state, institutional, family, and other) for their undergraduate education (table 6). Three years later, in 1995–96, fourth- and fifth-year seniors at public 4-year institutions who participated in a federal student loan program borrowed an average of $12,800 in *federal loans* for their undergraduate education, about $2,700 (or 27 percent) more than the 1992–93 bachelor's degree recipients who graduated from public 4-year institutions borrowed from *all sources.* At private, not-for-profit institutions, the increase in the average amount borrowed between 1992–93 and 1995–96 was approximately $1,200 (from $13,800 to $15,000, about 6 percent). Because students at private, not-for-profit institutions were more likely than those at public institutions to take out institutional loans in 1992–93 (2 percent versus less than 1 percent),[9] the average amount borrowed through federal loan programs in 1995–96 may understate the total amount borrowed at private, not-for-profit institutions more than it does at public institutions.

---

[9] U.S. Department of Education, National Center for Education Statistics, *Student Financing of Undergraduate Education, 1992–93* [National Postsecondary Student Aid Study], NCES 95-202, by John Tuma and Sonya Geis, Andrew G. Malizio, project officer (Washington, DC: 1995), 90.

Table 6—Percentage distribution of students participating in federal student loan programs with any loans in 1992–93 and federal loans in 1995–96 according to total amount borrowed and average amount borrowed for undergraduate education

	Less than $5,000	$5,000–9,999	$10,000–14,999	$15,000–19,999	$20,000 or more	Average
			1992–93 bachelor's degree recipients (All loans)			
Total*	16.6	28.0	27.9	14.9	12.6	$11,707
Income and dependency level						
Dependent						
Less than $29,999	18.9	22.3	29.6	17.7	11.5	12,095
$30,000–59,999	17.5	26.8	29.5	14.9	11.3	11,174
$60,000 or more	20.4	23.5	24.6	13.4	18.1	13,017
Independent, any income	14.1	32.0	27.2	14.2	12.5	11,527
Institution level and control						
Public 4-year	20.7	31.1	27.7	13.4	7.1	10,117
Private, not-for-profit 4-year	11.6	22.4	29.5	16.3	20.2	13,802
			1995–96 4th- and 5th-year undergraduates (Federal loans only)			
Total	9.6	24.4	29.3	21.0	15.7	13,409
Institution level and control						
Public 4-year	11.0	27.7	29.3	17.8	14.1	12,776
Private, not-for-profit 4-year	6.0	16.3	29.2	28.8	19.7	14,961

*Includes a small number who attended private, for-profit institutions.

NOTE: Percentages may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1993 Baccalaureate and Beyond Longitudinal Study First Followup (B&B:93/94), Data Analysis System; and U.S. Department of Education, National Center for Education Statistics, 1996 National Postsecondary Student Aid Study (NPSAS:96).

Data are not yet available on borrowing from all sources for the 1995–96 seniors, and the B&B data for 1992–93 bachelor's degree recipients do not distinguish among amounts borrowed from different sources. Thus, it is impossible to make an exact comparison of cumulative borrowing. However, because some federal loan program participants borrow from other sources as well, the increases reported here understate the true increases over the three-year period. Despite the difficulty of making exact comparisons, it appears safe to conclude that the amounts borrowed have increased substantially, at least at public 4-year institutions. Among 1992–93 graduates of public institutions, for example, 7 percent of federal loan program participants borrowed $20,000 or more for their undergraduate education from all sources, while 14 percent of their 1995–96 counterparts borrowed this amount in federal loans alone. Because of this major increase in borrowing, one can expect that the 1995–96 bachelor's degree recipients will face larger loan payments than their 1992–93 counterparts did. Their debt burden might also increase, depending on their salaries.

EARLY LABOR FORCE EXPERIENCES

Approximately one year after they graduated (in spring 1994), most of the 1992–93 bachelor's degree recipients were in the labor force, even those who were continuing their formal education. The 1989–90 beginning postsecondary students whose last enrollment ended by December 1992 were also recent entrants into the labor force. All of this group had been out of school for at least a year by spring 1994, and some had been out for as many as four years, depending on the length of their program or, if they did not complete their program, when they left.[10]

This section describes the early labor force experiences of these individuals from a number of perspectives. Specifically, it examines their employment rates, occupations, and earnings in the spring of 1994, and their experience with unemployment since completing or leaving their academic programs. For the bachelor's degree recipients, it also describes whether and how they combined further education with employment. (None of the beginning postsecondary students in the analysis group were still enrolled at this point, although overall 13 percent of those who began their postsecondary education in 1989–90 were still enrolled.[11]) Particular attention is paid here to how the early labor force experiences of these individuals varied with the type of institution attended, undergraduate major, and personal characteristics such as gender, age, and race–ethnicity.

EMPLOYMENT

Employment and Enrollment Among Bachelor's Degree Recipients

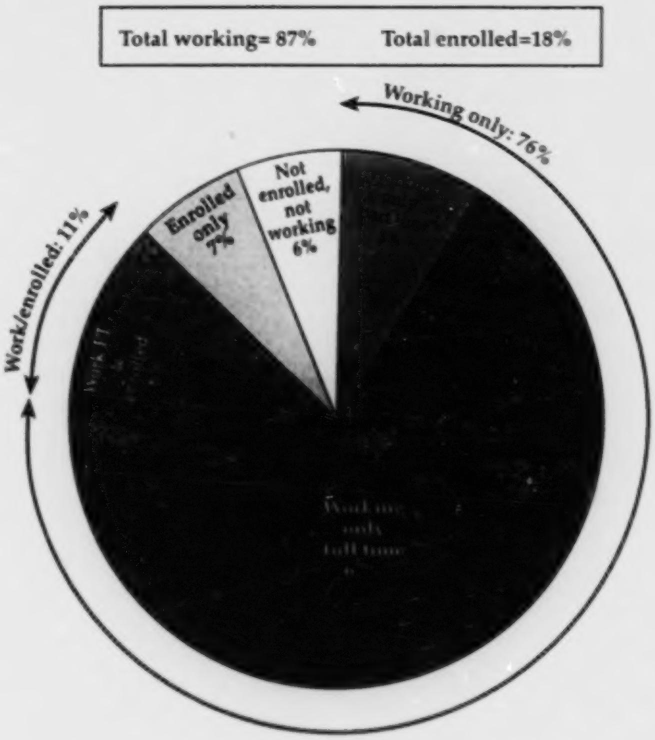
In April 1994, about one year after they graduated, the vast majority of 1992–93 bachelor's degree recipients were employed (figure 3 and table 7). Seventy-six percent were working only, and another 11 percent were combining education and work. The remaining 13 percent were about evenly divided between enrolling only and neither working nor enrolling. The group that was neither working nor enrolled included individuals who were unemployed (but looking for work) or not in the labor force (not employed and not looking for work).

---

[10] Figure 2 shows the last year of enrollment separately for noncompleters, associate's degree recipients, and certificate recipients.

[11] U.S. Department of Education, National Center for Education Statistics, *Descriptive Summary of 1989–90 Beginning Postsecondary Students: 5 Years Later*, 3.

Figure 3—Percentage distribution of 1992–93 bachelor's degree recipients according to work and enrollment status in April 1994



SOURCE: U.S. Department of Education, National Center for Education Statistics, 1993 Baccalaureate and Beyond Longitudinal First Followup (B&B:93/940), Data Analysis System.

What 1992–93 bachelor's degree recipients were doing in April 1994 varied with their gender, age, and undergraduate major. Gender differences were relatively minor. Males were slightly more likely than females to be enrolled only, but a relatively small proportion of bachelor's degree recipients were in this category (7 percent).

Table 7—Percentage of 1992–93 bachelor's degree recipients who were employed and enrolled and percentage distribution according to enrollment and employment status in April 1994, by selected student and institutional characteristics

	Total*		Enrollment and employment status			
	Employed	Enrolled	Employed and not enrolled	Employed and enrolled	Enrolled and not employed	Neither employed nor enrolled
Total	87.0	17.9	75.8	11.2	6.7	6.3
Gender						
Male	86.5	18.3	76.1	10.5	7.8	5.7
Female	87.4	17.6	75.6	11.8	5.8	6.9
Race–ethnicity						
American Indian/Alaskan Native	86.9	14.7	74.3	12.6	2.2	10.9
Asian/Pacific Islander	80.1	20.6	70.4	9.7	10.9	9.1
Black, non-Hispanic	85.1	16.7	73.4	11.7	5.1	9.9
Hispanic	83.5	19.9	69.8	13.8	6.1	10.4
White, non-Hispanic	87.8	17.7	76.7	11.1	6.6	5.6
Age received bachelor's degree						
24 or younger	86.8	19.2	75.3	11.5	7.7	5.5
25–29	90.2	10.6	81.5	8.8	1.9	7.9
30 or older	85.3	17.4	73.8	11.5	5.8	8.9
Borrowing for undergraduate education						
Did not borrow	85.8	19.7	74.2	11.5	8.2	6.1
Borrowed	88.4	16.1	77.4	10.9	5.2	6.4
Degree-granting institution						
Public 4-year	87.6	17.8	76.1	11.5	6.2	6.2
Private, not-for-profit 4-year	85.8	18.4	75.1	10.8	7.7	6.5
Other	86.3	14.5	77.6	8.7	5.8	7.9
Baccalaureate degree major						
Business and management	92.4	9.9	85.3	7.1	2.7	4.9
Engineering, math, or science	79.6	26.3	66.1	13.5	12.7	7.7
Humanities or social science	84.4	21.0	71.4	13.0	8.0	7.6
Other	88.8	16.8	77.4	11.4	5.5	5.8
Primary occupation April 1994						
Business and management	100.0	7.9	92.1	7.9	(*)	(*)
School teacher	100.0	15.1	84.9	15.1	(*)	(*)
Professional	100.0	11.4	88.6	11.4	(*)	(*)
Administrative, clerical, support	100.0	18.0	82.0	18.0	(*)	(*)
Sales, service	100.0	13.3	86.7	13.3	(*)	(*)
Other	100.0	13.3	86.7	13.3	(*)	(*)

*Sums to more than 100 percent because some are both employed and enrolled.

(*) Not applicable.

NOTE: Percentages may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1993 Baccalaureate and Beyond Longitudinal Study First Followup (B&B:93/94), Data Analysis System.

Age differences were more notable. Graduates who were 24 years or younger when they received their degree (that is, those who started college relatively soon after graduating from high school and attended mostly full time without any long breaks in attendance) were considerably more likely than those who were 25 to 29 years old when they graduated to be enrolled for further education in April 1994.

Work/enrollment patterns varied by undergraduate major, but not by the type of institution attended. Business and management majors were the most likely to be working only, and those who majored in engineering, mathematics, or science were the most likely to be enrolled only. Graduates of public and private, not-for-profit institutions had similar work/enrollment patterns.

Borrowing for undergraduate education may discourage graduates from immediately enrolling for further education unless they are working as well. Borrowers (about half of all bachelor's degree recipients, table 18) were less likely than nonborrowers to be enrolled only, but the two groups were about equally likely to be combining school and work. Borrowers were slightly more likely than nonborrowers to be working only.

Full- Versus Part-Time Employment for Bachelor's Degree Recipients

Distinguishing between full- and part-time employment allows one to take a closer look at how graduates are participating in the labor market and how they are combining work and further education (table 8). Among those who were working only, the vast majority (89 percent) were working full time. Whether the remaining 11 percent who were working part time were doing so by choice or because they could not find full-time employment is unknown.

The graduates combining enrollment and work were about equally divided between working full and part time. Their employment status was related to their enrollment status. Among those who were enrolled full time, more than half (59 percent) were in the labor force as well: 17 percent working full time, 33 percent working part time, and 9 percent unemployed but looking for work. Among those who were enrolled part time, all but 9 percent were also in the labor force, and about two-thirds were working full time.

As indicated in the previous section, borrowing as an undergraduate may encourage employment rather than enrollment only. However, it does not necessarily encourage full-time employment. In fact, the proportions of borrowers and nonborrowers who worked full time were about the same.

Table 8—Percentage distribution of 1992–93 bachelor's degree recipients according to employment status in April 1994, by selected student characteristics

	Employed				
	Total	Full time	Part time	Unemployed	Out of the labor force
Total	87.0	73.1	13.9	4.5	8.5
Employment/enrollment status April 1994					
Enrolled and employed	100.0	53.4	46.6	(*)	(*)
Enrolled and not employed	(*)	(*)	(*)	18.4	81.6
Employed and not enrolled	100.0	88.5	11.5	(*)	(*)
Neither employed nor enrolled	(*)	(*)	(*)	52.3	47.7
Enrollment status April 1994					
Not enrolled	92.3	81.7	10.6	4.0	3.7
Enrolled full time	49.8	17.2	32.6	9.0	41.2
Enrolled part time	88.7	66.5	22.1	2.6	8.7
Borrowing for undergraduate education					
Did not borrow	85.8	72.7	13.1	4.2	10.0
Borrowed	88.4	73.9	14.5	4.7	7.0

(*) Not applicable.

NOTE: Percentages may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1993 Baccalaureate and Beyond Longitudinal Study First Followup (B&B:93/94), Data Analysis System.

Employment Among Noncompleters and Associate's Degree or Certificate Recipients

As was the case with the bachelor's degree recipients, the vast majority (81 percent) of the 1989–90 beginning postsecondary students whose last enrollment had ended by December 1992 were employed in April 1994 (table 9 and figure 4). The remaining 19 percent were either unemployed or not in the labor force. Among associate's degree recipients, 86 percent were employed; among noncompleters, 81 percent; and among certificate earners, 80 percent. However, small sample sizes make it impossible to determine whether the apparent higher employment rate of associate's degree recipients is real or simply a statistical artifact.

Like the 1992–93 bachelor's degree recipients, noncompleters and associate's degree and certificate recipients were recent entrants into the labor force in spring 1994. Comparisons of the

Table 9—Percentage distribution of 1989–90 beginning postsecondary students whose last enrollment ended by December 1992 according to employment status in April 1994, by selected student and institutional characteristics

	Employed	Not employed
Total	80.9	19.2
Gender		
Male	85.8	14.2
Female	76.7	23.3
Race–ethnicity		
Asian/Pacific Islander	77.2	22.8
Black, non-Hispanic	72.9	27.1
Hispanic	81.5	18.5
White, non-Hispanic	82.1	17.9
Age when began postsecondary education		
19 or younger	83.2	16.9
20 or older	78.0	22.1
Socioeconomic status		
Lowest quartile	75.0	25.0
Middle quartiles	81.4	18.6
Highest quartile	85.4	14.6
Student loans		
Did not take out student loans	81.4	18.6
Took out student loans	79.3	20.7
Highest degree attained by December 1992		
None	80.6	19.4
Last attended 4-year	79.4	20.6
Last attended public 2-year	83.2	16.8
Last attended private, for-profit	69.2	30.8
Certificate	79.5	20.5
Associate's degree	86.2	13.9
Major during last enrollment spell		
Business and management	81.3	18.7
Engineering, math, or science	81.5	18.5
Humanities or social science	85.1	15.0
Education	81.3	18.7
Other	80.4	19.6

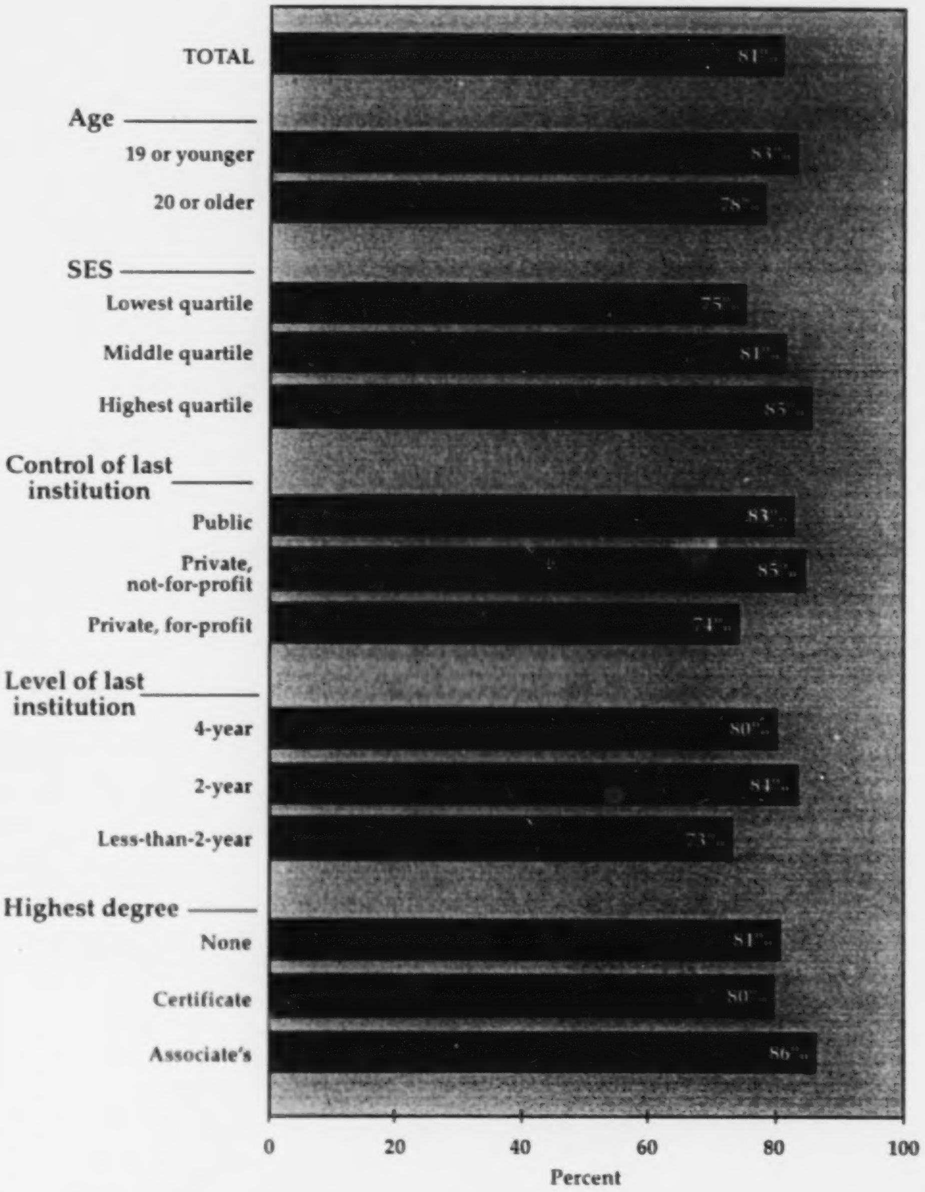
Table 9—Percentage distribution of 1989–90 beginning postsecondary students whose last enrollment ended by December 1992 according to employment status in April 1994, by selected student and institutional characteristics—Continued

	Employed	Not employed
Academic year last enrolled		
1989–90	78.4	21.6
1990–91	83.1	16.9
1991–92	82.3	17.7
1992–93	80.4	19.6
Level of last institution		
4-year	80.3	19.8
2-year	83.5	16.5
Less-than-2-year	73.0	27.0
Control of last institution		
Public	82.6	17.4
Private, not-for-profit	84.5	15.5
Private, for-profit	74.0	26.1
Level and control of last institution		
Public 4-year	78.8	21.2
Private, not-for-profit 4-year	85.5	14.6
Public 2-year	83.4	16.6
Private, for-profit	74.0	26.1
Other	83.6	16.4
Primary occupation in 1993		
Clerical	91.1	8.9
Craftsman/repair, laborer, or machinist	91.0	9.0
Manager/administrator	93.0	7.0
Professional	96.5	3.5
Sales	87.6	12.4
Service	94.3	5.7
Other	91.1	8.9

NOTE: Percentages may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1990 Beginning Postsecondary Students Longitudinal Study—Second Follow-up (BPS:90/94), Data Analysis System.

Figure 4—Percentage of 1989–90 beginning postsecondary students whose last enrollment ended by December 1992 who were employed in April 1994, by selected student and institutional characteristics



SOURCE: U.S. Department of Education, National Center for Education Statistics, 1990 Beginning Postsecondary Students Longitudinal Study—Second Follow-up (BPS:90/94), Data Analysis System.

employment rates of the two groups must be made with care, however, because the nonbaccalaureate group being analyzed here excludes anyone enrolled after December 1992, while many of the bachelor's degree recipients were combining school and work. Comparing the nonbaccalaureate group only to bachelor's degree recipients who were not enrolled shows a considerably higher employment rate for bachelor's degree recipients than for the nonbaccalaureate group (92 percent compared with 81 percent) (tables 8 and 9).

Employment rates for the noncompleters and associate's degree or certificate recipients differed by gender, with higher employment rates for males than females (86 percent compared with 77 percent). Some of the 23 percent of females who were not employed were unemployed but available and looking for work, and some were not in the labor force.

Other characteristics associated with higher employment rates were first enrolling in postsecondary education at age 19 or younger (rather than older); being in the highest (rather than lowest) socioeconomic status (SES) quartile in 1989–90; having last attended a public or private, not-for-profit institution (rather than a private, for-profit institution); and having attended a 2-year (rather than less-than-2-year) institution last (table 9).

OCCUPATIONS

Bachelor's Degree Recipients

In April 1994, 20 percent of employed 1992–93 bachelor's degree recipients were in business and management occupations, 26 percent were in professional occupations, and 18 percent were in administrative/clerical occupations (table 10).[12] The rest were teachers (12 percent), in sales and service occupations (11 percent), or in "other" occupations (14 percent). As would be expected, undergraduate majors and occupations one year after graduation were related. For instance, business and management majors were more likely to be in business and management than most other occupations,[13] while graduates majoring in engineering, mathematics, or science were more likely to report professional or "other" occupations than any other occupation. Among humanities and social science majors, about equal proportions were in business and management, professional, and administrative/clerical occupations (21 to 23 percent).

---

[12] The glossary in appendix A contains a description of the occupations included in each category.

[13] The difference between business and management and administrative/clerical is not statistically significant.

Table 10—Percentage distribution of employed 1992–93 bachelor's degree recipients according to April 1994 occupation, by selected student and institutional characteristics

	Business and management	School teacher	Profess-ional	Administrative, clerical, support	Sales, service	Other
Total	20.1	11.7	25.6	17.8	11.3	13.5
Gender						
Male	22.8	6.2	25.8	13.0	12.7	19.6
Female	17.9	16.2	25.5	21.8	10.2	8.5
Race–ethnicity						
American Indian/Alaskan Native	22.5	15.9	24.6	18.3	10.3	8.4
Asian/Pacific Islander	24.6	4.8	24.8	19.4	11.5	15.0
Black, non-Hispanic	17.5	10.3	20.2	29.4	8.0	14.5
Hispanic	17.2	14.7	24.4	21.7	10.1	12.0
White, non-Hispanic	20.2	12.0	26.0	16.7	11.6	13.5
Age received bachelor's degree						
24 or younger	20.2	11.2	23.8	19.5	13.1	12.2
25–29	18.7	10.9	27.3	16.6	9.6	17.0
30 or older	21.0	14.4	32.3	11.4	4.7	16.2
Borrowing for undergraduate education						
Did not borrow	20.9	10.6	25.4	17.9	12.1	13.0
Borrowed	19.3	12.6	26.1	18.1	10.0	13.9
Degree-granting institution						
Public 4-year	19.0	12.7	25.7	17.7	11.2	13.7
Private, not-for-profit 4-year	22.7	10.3	25.2	18.2	10.8	12.8
Other	19.1	4.9	27.4	15.8	18.3	14.4
Baccalaureate degree major						
Business and management	31.4	1.2	20.3	23.6	14.1	9.5
Engineering, math, or science	10.0	6.6	35.3	11.9	7.7	28.6
Humanities or social science	22.3	7.8	21.4	23.2	14.1	11.2
Other	16.0	22.4	27.5	13.4	9.4	11.3

NOTE: Percentages may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1993 Baccalaureate and Beyond Longitudinal Study First Followup (B&B:93/94), Data Analysis System.

Although the enrollment of women in higher education has grown over the past several decades to the point that women now constitute a majority,[14] men and women tend to be employed in different occupations when they graduate. Among the 1992–93 bachelor's degree recipients, men were more likely than women to be in business and management and in sales/service occupations, while women were much more likely than men to be teachers or hold administrative/clerical/support jobs (table 10).[15]

Age and occupation appear related. For example, bachelor's degree recipients 30 years or older were more likely than those 24 years or younger to be in professional occupations and less likely to be in administrative/clerical/support or sales/service occupations. This pattern may reflect greater employment experience either before or during postsecondary education enrollment. Borrowers and nonborrowers had similar occupational patterns.

How Bachelor's Degree Recipients Found Their Jobs

The discussion here is limited to 1992–93 bachelor's degree recipients who were employed full time to help clarify how graduates embarking on a career find their jobs. The most common way the graduates found out about their jobs was through a referral from family, friends, or professors, with 35 percent finding their jobs this way (table 11). Another 19 percent found their jobs through a want ad, and 10 percent found them through a campus placement office.

Job search methods and types of jobs (in terms of salary and occupation) were related. For example, graduates whose jobs paid $25,000 to $34,999 per year were more likely than those whose jobs paid less than $20,000 to have found them through the campus placement office or an employment agency. In contrast, graduates with jobs in the $15,000 to $19,999 per year range were more likely than those with higher paying jobs to have found them through want ads. Similarly, graduates with sales/service jobs were more likely than those with professional jobs to have found them through want ads.

---

[14] In fall 1970, women made up 41 percent of enrollment in higher education, and in fall 1992, 55 percent. See U.S. Department of Education, National Center for Education Statistics, *Digest of Education Statistics 1996*, NCES 96–133, Washington, DC: 1996, 176.

[15] The early labor force experiences of female bachelor's degree recipients will be examined in detail in a forthcoming report, *Young Women in the Labor Force*.

Table 11—Percentage of 1992–93 bachelor's degree recipients employed full time who found their April 1994 job in various ways, by selected student characteristics

	Referrals	Want ad	Campus placement	Interview	Employment agency	Advancement in company
Total	35.0	19.2	9.9	5.7	6.7	7.3
Gender						
Male	38.4	17.3	11.4	4.7	6.9	6.4
Female	32.0	20.9	8.6	6.5	6.5	8.1
Race–ethnicity						
American Indian/Alaskan Native	33.6	15.4	20.4	4.0	7.2	2.1
Asian/Pacific Islander	33.7	14.9	19.2	3.2	8.7	6.1
Black, non-Hispanic	32.4	20.2	9.9	7.2	5.4	7.4
Hispanic	33.3	13.1	7.2	9.9	7.5	12.1
White, non-Hispanic	35.4	19.7	9.4	5.5	6.6	7.1
Age received bachelor's degree						
24 or younger	36.6	19.6	11.0	5.4	6.4	5.8
25–29	33.7	18.5	9.2	5.7	6.7	10.8
30 or older	28.7	18.1	5.7	6.8	7.5	10.9
Annual salary at April 1994 job						
Less than $15,000	40.7	22.0	4.2	5.8	4.2	5.3
$15,000–19,999	36.4	24.8	7.9	5.9	4.9	6.6
$20,000–24,999	35.2	18.5	10.4	4.8	7.2	7.4
$25,000–34,999	30.6	16.6	14.4	5.2	8.8	7.3
$35,000 or more	33.6	14.2	9.2	6.0	8.2	11.1
Primary occupation April 1994						
Business and management	35.5	16.7	9.9	4.5	7.0	11.1
School teacher	33.7	12.5	10.8	9.6	3.3	4.1
Professional	30.5	18.6	13.4	6.1	6.9	7.4
Administrative, clerical, support	37.7	22.3	7.5	4.9	7.5	7.7
Sales, service	41.3	28.9	3.4	3.8	5.6	3.7
Other	35.6	18.8	10.1	6.0	8.2	5.6

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1993 Baccalaureate and Beyond Longitudinal Study First Followup (B&B:93/94), Data Analysis System.

Noncompleters and Associate's Degree or Certificate Recipients

Among the noncompleters and associate's degree or certificate recipients, 25 percent had clerical jobs in the spring of 1994; 20 percent had craftsman/repair, laborer, or machinist jobs; 16 percent had management/administrator positions; and 16 percent had service occupations (table 12). The rest had sales or "other" positions. Associate's degrees and certificates appear to lead to different types of occupations. As an example, those with a certificate as their highest award were much more likely than those with an associate's degree to have craftsman/repair, labor, or machinist positions, while those with associate's degrees were much more likely than those with certificates to be managers or administrators.

As with the bachelor's degree recipients, the occupations of the nonbaccalaureate group were strongly related to gender. Among males, approximately half were in either blue-collar occupations (craftsman/repair, labor, or machinist) or managerial/administrative positions (33 percent and 20 percent, respectively). Among females, 38 percent held clerical positions and 21 percent worked in service occupations. Similar percentages of males and females had professional and sales occupations (5 percent to 6 percent in each case). Also, as with bachelor's degree recipients, borrowers and nonborrowers were no different in terms of their occupations.

EARNINGS

Annual Salaries of Bachelor's Degree Recipients

Table 13 shows the annualized salaries for 1992–93 bachelor's degree recipients from their primary job in April 1994 (separately for all bachelor's degree recipients, those employed full time, and those employed part time). The primary job was defined as the job for which the most hours were worked. If the hours were the same for more than one job, the one with the highest salary was considered the primary job.

This discussion focuses on those employed full time based on the belief that the salaries of this group most accurately portray the immediate economic prospects of bachelor's degree recipients after graduation. This full-time employed group constitutes the majority of the 1992–93 bachelor's degree recipients (73 percent) (table 8). One could argue that some bachelor's degree recipients may be able to find only part-time work and that this should be reflected in any discussion of the economic outcomes of college graduates. However, among those working part time are many who are enrolled as well as working and therefore not necessarily working in a

Table 12—Percentage distribution of employed 1989–90 beginning postsecondary students whose last enrollment ended by December 1992 according to 1993 occupation, by selected student and institutional characteristics

	Clerical	Craftsman/ repair, laborer, or machinist	Manager/ admin-istrator	Profes-sional	Sales	Service	Other
Total	25.0	19.9	16.3	6.0	5.6	16.1	11.1
Gender							
Male	10.3	33.2	20.4	5.8	5.2	11.1	14.0
Female	38.2	8.1	12.7	6.1	5.9	20.6	8.5
Race–ethnicity							
Asian/Pacific Islander	34.9	14.4	12.5	9.6	6.2	19.3	3.2
Black, non-Hispanic	22.2	13.2	11.7	3.8	8.2	32.3	8.6
Hispanic	44.2	15.5	13.9	6.4	6.2	6.7	7.2
White, non-Hispanic	23.2	21.2	17.3	6.1	5.1	14.9	12.2
Age when began postsecondary education							
19 or younger	26.6	15.5	19.0	4.4	7.3	15.8	11.4
20 or older	22.9	25.8	12.8	8.0	3.2	16.6	10.6
Socioeconomic status							
Lowest quartile	25.5	19.9	13.1	9.0	4.9	18.3	9.4
Middle quartiles	23.7	21.3	16.4	4.9	5.3	15.7	12.7
Highest quartile	27.4	17.1	19.1	5.4	6.7	15.2	9.1
Student loans							
Did not take out student loans	25.4	19.7	17.2	5.3	5.1	16.5	10.9
Took out student loans	24.1	20.6	13.9	7.7	7.0	15.0	11.6
Highest degree attained by December 1992							
None	23.6	21.3	18.4	5.2	6.5	13.8	11.3
Last attended 4-year	25.0	17.5	15.9	5.6	9.6	16.8	9.7
Last attended public 2-year	22.8	21.0	20.3	5.2	6.2	11.8	12.8
Last attended private, for-profit	27.6	30.6	12.2	5.0	3.4	15.2	6.1
Certificate	25.3	22.0	7.9	7.1	4.0	24.1	9.6
Associate's degree	35.8	4.5	20.6	9.2	1.8	15.3	12.9

Table 12—Percentage distribution of employed 1989–90 beginning postsecondary students whose last enrollment ended by December 1992 according to 1993 occupation, by selected student and institutional characteristics—Continued

	Clerical	Craftsman/ repair, laborer, or machinist	Manager/ admin-istrator	Profes-sional	Sales	Service	Other
Major during last enrollment spell							
Business and management	38.5	11.6	20.3	2.6	8.6	11.1	7.3
Engineering, math, or science	20.6	35.2	16.7	3.1	2.0	6.9	15.4
Humanities or social science	33.3	11.0	14.9	7.3	4.1	18.8	10.7
Education	36.9	13.2	22.7	1.5	5.1	11.2	9.5
Other	10.1	25.0	12.2	10.6	4.2	26.6	11.4
Academic year last enrolled							
1989–90	22.7	26.9	14.8	5.0	4.2	15.6	10.9
1990–91	29.5	16.3	12.2	5.9	6.2	18.3	11.6
1991–92	23.3	14.9	23.3	7.1	6.3	13.9	11.3
1992–93	29.3	15.3	9.8	6.9	8.2	22.0	8.5
Level of last institution							
4-year	25.1	16.4	15.7	7.2	8.8	15.9	10.9
2-year	24.5	19.5	18.9	6.1	5.0	13.9	12.1
Less-than-2-year	28.8	24.9	7.4	4.6	4.7	21.9	7.8
Control of last institution							
Public	23.6	19.1	18.1	5.6	5.9	15.3	12.5
Private, not-for-profit	25.7	18.8	15.6	13.6	5.6	9.6	11.2
Private, for-profit	31.9	23.5	9.4	5.3	4.6	19.0	6.3
Level and control of last institution							
Public 4-year	25.4	15.1	15.8	5.7	9.4	17.3	11.4
Private, not-for-profit 4-year	24.3	20.7	15.7	12.9	6.5	11.0	9.1
Public 2-year	23.6	19.2	19.0	5.5	5.4	14.7	12.6
Private, for-profit	31.9	23.5	9.4	5.3	4.6	19.0	6.3
Other	20.7	24.7	14.7	9.2	2.5	14.2	14.1

NOTE: Percentages may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1990 Beginning Postsecondary Students Longitudinal Study—Second Follow-up (BPS:90/94), Data Analysis System.

Table 13—Percentage distribution of 1992–93 bachelor's degree recipients who were employed in April 1994 according.to annualized salary from primary April 1994 job and average annualized salary, by selected student and institutional characteristics

	Less than $10,000	$10,000 to 14,999	$15,000 to 19,999	$20,000 to 24,999	$25,000 to 34,999	$35,000 to 49,999	$50,000 or more	Average
					Total			
Total	12.2	16.1	19.5	20.0	21.1	8.4	2.8	$ 22,131
Gender								
Male	9.6	13.2	16.2	18.6	26.5	11.5	4.4	24,517
Female	14.2	18.4	22.1	21.1	16.7	5.9	1.6	20,219
Race–ethnicity								
American Indian/Alaskan Native	9.7	16.5	21.0	22.9	14.3	12.6	3.0	21,933
Asian/Pacific Islander	10.5	12.6	17.8	26.5	19.8	10.2	2.6	22,257
Black, non-Hispanic	17.0	13.2	25.1	18.4	17.3	7.1	1.8	20,888
Hispanic	14.1	15.6	17.6	22.9	17.7	9.5	2.6	21,726
White, non-Hispanic	11.8	16.5	19.3	19.6	21.7	8.3	2.9	22,222
Age received bachelor's degree								
24 or younger	13.7	17.8	21.4	21.0	19.6	5.2	1.3	20,327
25–29	8.7	14.8	18.2	19.1	24.1	12.5	2.7	23,585
30 or older	7.9	9.5	11.6	15.7	25.4	19.7	10.2	29,235
Borrowing for undergraduate education								
Did not borrow	11.7	16.1	18.4	20.2	21.3	8.8	3.5	22,677
Borrowed	12.4	16.2	20.6	19.7	21.0	8.0	2.1	21,628
Degree-granting institution								
Public 4-year	12.0	16.7	19.9	20.2	22.0	7.1	2.2	21,559
Private, not-for-profit 4-year	12.1	15.6	17.7	19.7	19.9	11.0	4.1	23,392
Other	16.3	9.0	27.8	18.0	15.2	9.0	4.8	21,795
Baccalaureate degree major								
Business and management	6.2	11.1	17.8	20.8	28.8	10.8	4.6	25,726
Engineering, math, or science	12.4	12.5	11.8	15.5	30.0	15.9	1.9	24,343
Humanities or social science	16.7	19.8	21.4	21.8	14.4	4.3	1.7	19,192
Other	12.8	18.2	22.4	20.2	17.1	6.5	2.9	20,929
Primary occupation April 1994								
Business and management	6.9	9.9	22.1	23.4	24.1	9.1	4.6	24,490
School teacher	14.4	26.7	21.3	24.6	11.3	0.7	1.0	18,187
Professional	7.4	10.0	14.0	19.8	30.0	15.4	3.5	25,672
Administrative, clerical, support	19.8	22.6	26.0	17.3	11.4	1.9	0.9	17,650
Sales, service	22.1	20.9	18.4	13.4	15.1	8.4	1.7	18,987
Other	7.6	14.6	16.8	20.5	27.0	9.4	4.1	24,201

Table 13—Percentage distribution of 1992–93 bachelor's degree recipients who were employed in April 1994 according to annualized salary from primary April 1994 job and average annualized salary, by selected student and institutional characteristics—Continued

	Less than $10,000	$10,000 to 14,999	$15,000 to 19,999	$20,000 to 24,999	$25,000 to 34,999	$35,000 to 49,999	$50,000 or more	Average
				Full time				
Total	4.6	13.9	21.1	22.7	24.5	9.9	3.3	$ 24,195
Gender								
Male	3.7	10.7	16.9	20.4	30.2	13.2	4.9	26,440
Female	5.3	16.7	24.7	24.6	19.7	7.1	1.9	22,286
Race–ethnicity								
Asian/Pacific Islander	1.5	7.8	20.6	31.4	23.8	11.7	3.2	24,885
Black, non-Hispanic	6.5	12.4	29.1	20.8	20.4	8.6	2.2	23,119
Hispanic	7.7	11.0	16.8	28.5	21.6	11.9	2.6	23,708
White, non-Hispanic	4.5	14.5	20.8	22.0	25.1	9.7	3.3	24,246
Age received bachelor's degree								
24 or younger	5.5	15.9	23.8	24.1	23.1	6.2	1.5	22,247
25–29	3.3	12.6	18.6	20.7	27.2	14.5	3.2	25,435
30 or older	1.6	6.4	11.2	17.3	28.9	23.1	11.5	31,994
Borrowing for undergraduate education								
Did not borrow	4.5	13.8	19.8	23.0	24.6	10.4	4.0	24,731
Borrowed	4.7	14.0	22.5	22.3	24.5	9.5	2.5	23,660
Degree-granting institution								
Public 4-year	4.6	14.4	21.5	23.1	25.5	8.5	2.5	23,525
Private, not-for-profit 4-year	4.4	13.8	18.9	22.2	23.1	13.0	4.6	25,625
Other	6.3	5.9	34.0	19.2	18.2	10.3	6.0	24,302
Baccalaureate degree major								
Business and management	2.1	9.8	17.7	22.5	31.2	11.8	5.0	27,069
Engineering, math, or science	3.0	9.4	13.2	17.8	35.5	19.0	2.2	27,232
Humanities or social science	7.2	17.8	24.0	26.3	17.5	5.3	2.0	21,324
Other	5.3	16.2	24.9	22.5	20.0	7.8	3.3	22,812
Primary occupation April 1994								
Business and management	3.9	8.4	23.0	24.4	25.5	9.9	4.9	25,419
School teacher	6.3	23.2	23.6	30.7	14.2	1.0	1.1	20,114
Professional	2.9	8.0	14.0	20.8	33.4	17.3	3.7	27,207
Administrative, clerical, support	7.1	21.2	31.7	22.1	14.2	2.5	1.2	20,215
Sales, service	7.2	20.5	22.0	17.2	19.7	11.3	2.1	22,235
Other	2.7	13.3	16.6	21.8	30.4	10.6	4.6	25,868

BEST COPY AVAILABLE

Table 13—Percentage distribution of 1992–93 bachelor's degree recipients who were employed in April 1994 according to annualized salary from primary April 1994 job and average annualized salary, by selected student and institutional characteristics—Continued

	Less than $10,000	$10,000 to 14,999	$15,000 to 19,999	$20,000 to 24,999	$25,000 to 34,999	$35,000 to 49,999	$50,000 or more	Average
				Part time				
Total	51.3	27.1	11.0	6.0	3.3	0.6	0.7	$ 11,463
Gender								
Male	47.2	29.7	11.8	6.8	2.8	0.6	1.1	12,160
Female	53.8	25.6	10.6	5.6	3.6	0.5	0.4	11,052
Race–ethnicity								
Asian/Pacific Islander	49.2	33.4	5.6	5.5	2.5	3.7	0.0	10,879
Black, non-Hispanic	66.7	17.0	6.0	7.3	3.0	0.0	0.0	10,252
Hispanic	40.6	32.4	21.5	0.8	1.9	0.0	2.8	13,759
White, non-Hispanic	51.0	27.1	11.0	6.4	3.5	0.4	0.6	11,446
Age received bachelor's degree								
24 or younger	54.9	27.2	9.6	5.3	2.4	0.4	0.3	10,749
25–29	40.2	27.5	16.0	10.1	5.1	1.1	0.0	12,687
30 or older	42.7	26.8	13.3	6.9	6.3	1.0	3.1	14,032
Borrowing for undergraduate education								
Did not borrow	50.9	28.0	10.4	5.8	3.4	0.6	0.9	11,648
Borrowed	51.2	27.1	11.1	6.3	3.3	0.6	0.5	11,353
Degree-granting institution								
Public 4-year	50.3	28.7	11.3	5.2	3.8	0.3	0.5	11,386
Private, not-for-profit 4-year	53.3	24.6	11.5	6.8	2.2	0.6	1.1	11,519
Other	55.6	20.9	3.8	12.4	3.4	4.0	0.0	11,983
Baccalaureate degree major								
Business and management	50.8	25.6	19.1	2.3	2.2	0.0	0.0	11,067
Engineering, math, or science	57.5	27.0	5.5	4.9	3.5	1.2	0.6	10,508
Humanities or social science	57.3	28.6	9.7	2.3	1.6	0.0	0.6	10,130
Other	45.6	26.7	11.7	9.7	4.6	0.8	0.9	12,743
Primary occupation April 1994								
Business and management	44.1	27.1	10.6	10.5	6.7	0.0	1.0	13,073
School teacher	42.2	38.8	13.1	3.6	1.7	0.0	0.7	11,613
Professional	39.7	23.9	14.0	12.4	6.3	1.9	1.8	14,909
Administrative, clerical, support	62.9	27.5	7.0	1.5	1.2	0.0	0.0	8,915
Sales, service	65.2	22.0	8.0	2.5	1.9	0.0	0.4	9,585
Other	40.4	23.3	18.0	11.6	4.8	1.7	0.2	13,122

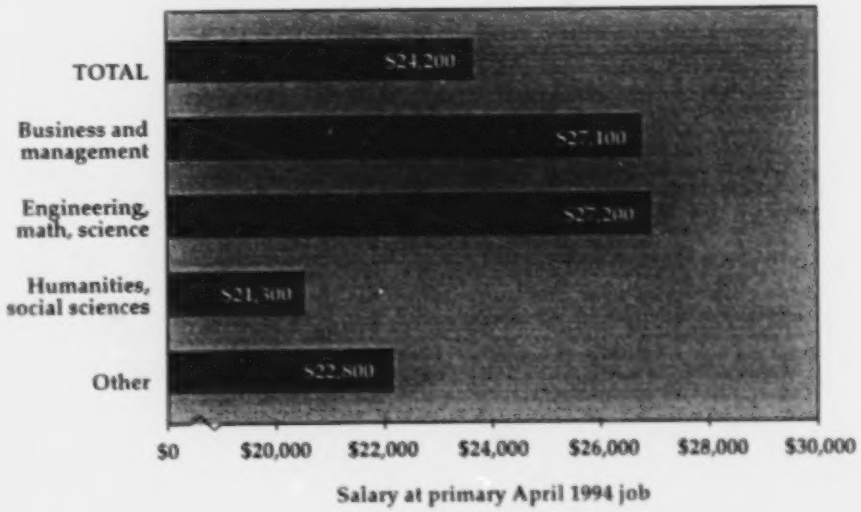
NOTE: Percentages may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1993 Baccalaureate and Beyond Longitudinal Study First Followup (B&B:93/94), Data Analysis System.

career-oriented job. In addition, some (whose number cannot be determined) may be working part time by choice rather than because they could find only part-time work. Finally, graduates were asked to report on only one job. Consequently, the amount of time and earnings of anyone holding multiple part-time jobs simultaneously in April 1994 would have been understated. Although the salaries of the graduates who are employed full time are not representative of all bachelor's degree recipients, they do provide a useful indicator of what a graduate who enters the labor market full time can expect to earn.

The average annualized salary for 1992–93 bachelor's degree recipients working full time in April 1994 was about $24,000 (table 13 and figure 5), with approximately two-thirds earning between $15,000 and $35,000. The average annualized salary for full-time workers varied with gender and age and also by major field of study, April 1994 occupation, and type of institution attended.

Figure 5—Average April 1994 salary of 1992–93 bachelor's degree recipients employed full time, by undergraduate major



SOURCE: U.S. Department of Education, National Center for Education Statistics, 1993 Baccalaureate and Beyond Longitudinal First Followup (B&B:93/940), Data Analysis System.

BEST COPY AVAILABLE

Among the full-time employed, the average annual salary was higher for males than females ($26,400 compared with $22,300), reflecting, at least in part, the male–female occupational differences described above. Average annual salary increased with age, from $22,200 for those 24 years or less when they graduated to $25,400 for those 25 to 29 years old and $32,000 for those 30 years or older. This pattern may reflect older graduates' greater lifetime experience in the work force and in higher paid occupations (table 8).

Some undergraduate majors, at least initially, seem to lead to better paying jobs than others. However, it is important to keep in mind that beginning salary differences may not persist over the long term as experience and performance become more important than undergraduate education in determining labor market success. Full-time employed bachelor's degree recipients with undergraduate majors in business and management, and in engineering, mathematics, or science earned considerably higher average annual salaries ($27,000 and $27,200, respectively) than did those who majored in humanities or social sciences ($21,300). Bachelor's degree recipients in business and management and in professional occupations in April 1994 had higher average salaries than their peers in teaching; administrative, clerical, or support; or sales or service occupations.

The average annual salary was about $2,000 more for a bachelor's degree recipient who graduated from a private, not-for-profit institution than for one who graduated from a public institution. This pattern has no straightforward explanation, but may reflect a number of interacting factors. Regional economic differences might contribute (private, not-for-profit institutions are more common in some parts of the country than others), as might occupational differences (for example, bachelor's degree recipients from private, not-for-profit institutions were slightly more likely than those from public institutions to have business and management occupations, which pay more than many other occupations). Differences in family backgrounds might also contribute to salary differences, especially since, as indicated above, 35 percent of all bachelor's degree recipients found their jobs through referrals from family, friends, and professors (table 11).

Earned Income of Noncompleters and Associate's Degree or Certificate Recipients

The average 1993 earned income for noncompleters and associate's degree or certificate recipients was $16,600 (table 14 and figure 6). This includes both full- and part-time employees, and employees who worked only part of the year because they were out of the labor force or unemployed for part of the year. Because no one in this group was enrolled at any time during

Table 14—Percentage distribution of 1989–90 beginning postsecondary students whose last enrollment ended by December 1992 according to 1993 earned income and average earned income, by selected student and institutional characteristics

	Less than $5,000	$5,000 to 9,999	$10,000 to 14,999	$15,000 to 19,999	$20,000 to 24,999	$25,000 to 34,999	$35,000 or more	Average
Total	11.3	13.5	23.5	20.1	14.5	11.0	6.2	$16,574
Gender								
Male	5.2	7.7	20.9	22.8	18.6	15.9	9.1	19,852
Female	16.8	18.8	25.8	17.6	10.8	6.6	3.6	13,601
Race–ethnicity								
Asian/Pacific Islander	29.1	15.4	21.6	13.7	5.5	8.0	6.6	12,200
Black, non-Hispanic	20.4	20.9	25.9	20.2	7.0	5.4	0.2	11,215
Hispanic	10.0	16.4	15.5	32.3	10.3	10.7	4.9	17,362
White, non-Hispanic	9.8	12.3	24.1	18.7	16.0	11.9	7.1	17,294
Age when began postsecondary education								
19 or younger	10.3	14.6	25.3	23.2	14.5	7.9	4.2	15,396
20 or older	12.7	11.9	20.8	15.7	14.5	15.5	9.0	18,265
Socioeconomic status								
Lowest quartile	16.8	13.5	21.2	20.1	11.3	12.9	4.2	15,376
Middle quartiles	10.6	13.7	23.8	19.2	14.2	11.6	7.1	17,026
Highest quartile	8.1	13.2	24.7	21.9	17.8	8.3	6.0	16,647
Student loans								
Did not take out student loans	10.0	13.1	21.6	21.5	15.3	11.6	6.9	17,144
Took out student loans	14.9	14.6	28.9	16.0	12.4	9.3	4.1	14,946
Highest degree attained by December 1992								
None	10.8	13.5	23.1	21.6	13.0	11.5	6.6	16,700
Last attended 4-year	11.8	16.1	27.0	19.2	9.4	9.2	7.2	15,919
Last attended public 2-year	9.7	12.5	20.7	22.2	14.0	13.3	7.5	17,553
Last attended private, for-profit	15.2	13.5	26.2	23.4	13.6	5.9	2.2	14,307
Certificate	11.8	14.8	24.3	16.2	17.8	9.4	5.8	16,446
Associate's degree	13.4	11.3	24.1	17.8	18.4	11.1	3.9	15,930
Major during last enrollment spell								
Business and management	11.6	11.4	27.6	22.2	13.5	10.3	3.4	15,442
Engineering, math, or science	8.8	9.8	15.9	22.2	14.7	16.0	12.7	20,666
Humanities or social science	15.3	20.5	20.6	22.9	4.6	8.8	7.3	15,642
Education	17.0	12.9	29.9	16.0	14.0	5.2	5.0	13,866
Other	10.6	12.5	21.8	17.7	20.2	11.6	5.6	16,759

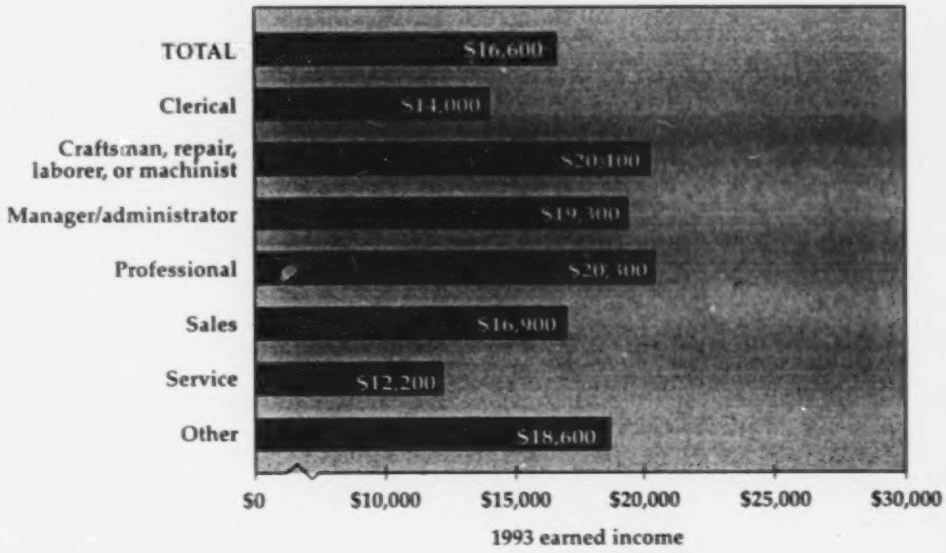
Table 14—Percentage distribution of 1989–90 beginning postsecondary students whose last enrollment ended by December 1992 according to 1993 earned income and average earned income, by selected student and institutional characteristics—Continued

	Less than $5,000	$5,000 to 9,999	$10,000 to 14,999	$15,000 to 19,999	$20,000 to 24,999	$25,000 to 34,999	$35,000 or more	Average
Academic year last enrolled								
1989–90	9.3	12.5	20.7	18.0	16.9	13.7	9.0	$18,123
1990–91	11.9	13.8	24.3	20.6	11.9	12.0	5.4	16,007
1991–92	14.2	13.1	24.2	22.5	14.6	7.5	4.0	15,530
1992–93	4.6	24.5	38.2	19.4	8.4	4.9	0.0	13,417
Level of last institution								
4-year	10.8	15.9	26.9	18.4	11.4	9.0	7.7	16,235
2-year	11.0	12.8	21.5	21.6	15.0	11.6	6.6	17,108
Less-than-2-year	13.2	13.8	24.6	18.0	16.9	9.8	3.7	15,170
Control of last institution								
Public	11.0	13.4	21.8	20.5	14.6	11.7	7.2	17,057
Private, not-for-profit	4.9	13.3	29.0	15.8	15.3	10.0	11.6	18,792
Private, for-profit	14.7	14.3	25.9	21.0	14.9	7.8	1.5	14,230
Level and control of last institution								
Public 4-year	12.3	16.5	26.5	18.3	10.7	9.7	6.0	15,561
Private, not-for-profit 4-year	5.0	13.6	28.3	18.4	14.4	6.2	14.1	18,831
Public 2-year	11.0	12.8	20.1	21.5	15.0	12.2	7.4	17,423
Private, for-profit	14.7	14.3	25.9	21.0	14.9	7.8	1.5	14,230
Other	6.2	11.2	27.3	13.7	20.4	13.6	7.6	17,862
Primary occupation in 1993								
Clerical	13.9	16.3	27.2	21.5	10.7	7.2	3.1	14,038
Craftsman/repair, laborer, or machinist	6.9	9.5	18.0	20.6	20.4	15.3	9.3	20,059
Manager/administrator	4.6	8.1	22.2	27.0	12.0	16.2	9.8	19,296
Professional	4.8	8.3	23.1	15.2	20.9	17.3	10.4	20,289
Sales	8.8	16.2	20.6	19.7	19.9	7.6	7.2	16,888
Service	19.3	19.1	31.9	13.7	9.8	4.7	1.7	12,181
Other	6.7	16.3	17.0	19.6	17.6	14.7	8.1	18,570

NOTE: Percentages may not sum to 100 due to rounding. Includes only those with earned income and includes income from all jobs.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1990 Beginning Postsecondary Students Longitudinal Study—Second Follow-up (BPS:90/94), Data Analysis System.

Figure 6—Average 1993 earned income from all jobs of 1989–90 beginning postsecondary students whose last enrollment ended by December 1992, by primary 1993 occupation



SOURCE: U.S. Department of Education, National Center for Education Statistics, 1990 Beginning Postsecondary Students Longitudinal Study—Second Follow-up (BPS:90/94), Data Analysis System.

1993, none would have worked only part of the year because of enrollment. The average earnings of the individuals in the nonbaccalaureate group were similar regardless of degree or certificate attainment. However, this does not necessarily mean that an associate's degree or certificate has no immediate effect on earnings. Indeed, earnings vary with other factors as well, such as gender, race–ethnicity, age, occupation, and time out of school, and many of these factors are interrelated. Associate's degree earners are likely to have been out of school less time than certificate earners or noncompleters, and those employed most recently may have lower salaries. It is also important to remember that the associate's degree earners in the analysis group may not be representative of associate's degree earners in general, because they represent only 34 percent of all beginning postsecondary students who earned associate's degrees by 1994.

Average 1993 earnings were higher for males than females and for white, non-Hispanics than black, non-Hispanics. In addition, those who began postsecondary education when they were 20 years or older earned more in 1993 than those who began when they were younger than

20 years, perhaps reflecting greater lifetime work experience or different occupations. Average earnings varied with the amount of time spent out of school as well, which again may reflect additional work experience or different occupations. For instance, those who had not been enrolled since the 1989–90 academic year had average 1993 earnings of $18,100, while those whose last enrollment ended by December 1992 had average 1993 earnings of $13,400. Those who had attended a public 2-year institution rather than a private, for-profit institution last also earned more.

Average earnings were also related to individuals' primary occupation. Those in the craftsman/repair, labor, or machinist; manager/administrator; and professional categories earned an average of around $20,000 in 1993, while those with clerical occupations earned an average of $14,000 and those in service occupations, $12,200. Individuals in sales occupations had earnings that were in between, averaging $16,900. Those who majored in engineering, math, or science appeared to have earned more than those in other fields, but only the difference with respect to business and management was statistically significant.

Comparing the Earnings of Bachelor's Degree Recipients with the Earnings of Noncompleters and Associate's Degree or Certificate Recipients

With an average annualized salary of $22,100 based on their primary April 1994 job, the bachelor's degree recipients appear to have been doing better financially than the noncompleters and associate's degree or certificate earners, whose average earnings for 1993 were $16,600 (tables 13 and 14). Because full- and part-time employment cannot be distinguished for the nonbaccalaureate group, no direct comparison of full-time employment is possible.

In comparing the earnings of the two groups, it is important to keep in mind the difference in how earnings were reported. Noncompleters and associate's degree or certificate recipients reported their earnings for calendar year 1993. How many different jobs they held, whether or not they were ever unemployed, and whether or not they worked full or part time all or part of the year are all unknown. The bachelor's degree recipients, in contrast, reported their April 1994 salary for their principal job, which was then annualized to estimate annual earnings. The number of hours they worked per week was taken into account, so part-time employment is reflected. However, no periods during which they were unemployed or out of the labor force were factored into this estimate of annual earnings. Moreover, some of the bachelor's degree recipients may have worked for part of the year at different salaries or they may have held multiple jobs simultaneously.

In summary, the bachelor's degree recipients' annualized salaries provide a good indication of their current earning power for their principal job, but may not accurately represent what they earned during the past year. In contrast, the noncompleters and associate's degree or certificate recipients' 1993 earnings represent what they actually earned over the past year; however, for anyone who was not working for a period of time or who recently changed jobs, they do not provide a very accurate picture of their current earning potential. The different types of employment information collected in the B&B and BPS studies reflect their different purposes and make comparisons between the two groups difficult.

EXPERIENCE WITH UNEMPLOYMENT

Another important aspect of labor force experience—and one that affects the ability to repay student loans—is unemployment. A person without a job but who is looking and available for work is considered to be unemployed. The unemployment rate for a particular group depends on their skills, abilities, and experience relative to the types of jobs available in their geographic area. A group's experience with unemployment can be examined from a number of different perspectives, including the unemployment rate at a particular time, how long any spells of unemployment last, and how long it takes to find a job.

Unemployment Rates in April 1994

In April 1994, 4.5 percent of all 1992–93 bachelor's degree recipients were unemployed (table 15). Those who pursued graduate study had a higher unemployment rate than those who did not (6.7 percent compared with 4.1 percent). No other apparent differences among subgroups were statistically significant. The April 1994 unemployment rate for the nonbaccalaureate group (4.7 percent) was similar to that of the bachelor's degree recipients (table 16). Among the nonbaccalaureate group, females had a higher unemployment rate than males (6.0 percent versus 3.1 percent). In addition, those who last attended a private, for-profit institution had a much higher unemployment rate than those who last attended a 4-year private, not-for-profit institution (8.2 percent versus 1.4 percent). No other apparent differences among subgroups were statistically significant.

Table 15—Percentage distribution of 1992–93 bachelor's degree recipients according to number of months unemployed since graduating, percentage with any unemployment spells since graduating, and percentage unemployed in April 1994, by selected student and institutional characteristics

	Number of months unemployed					Any unemployment spells	Unemployed April 1994
	None	1–2	3–4	5–9	More than 9		
Total	71.3	8.2	9.4	6.8	4.3	28.7	4.5
Gender							
Male	70.3	7.9	9.5	8.0	4.4	29.7	4.8
Female	72.2	8.5	9.3	5.8	4.2	27.8	4.3
Race–ethnicity							
American Indian/Alaskan Native	66.8	7.7	6.7	16.4	2.5	33.2	4.3
Asian/Pacific Islander	69.0	7.0	7.6	10.5	5.9	31.0	6.6
Black, non-Hispanic	68.2	7.7	7.2	8.0	8.9	31.8	7.6
Hispanic	69.7	7.5	8.9	5.9	8.0	30.3	7.6
White, non-Hispanic	71.7	8.4	9.8	6.5	3.6	28.3	4.0
Age received bachelor's degree							
24 or younger	69.8	9.4	10.3	6.9	3.7	30.3	4.0
25–29	71.8	6.7	9.0	7.6	5.0	28.2	5.6
30 or older	77.0	4.4	6.0	5.9	6.8	23.0	6.0
Date received bachelor's degree							
July 1992–September 1992	71.2	8.1	6.5	6.1	8.1	28.8	5.7
October 1992–January 1993	69.4	8.7	8.6	8.6	4.6	30.6	4.3
February 1993–June 1993	72.0	8.0	10.1	6.3	3.7	28.0	4.4
Months of graduate study							
None	69.9	8.8	10.0	7.2	4.1	30.1	4.1
One or more	78.7	5.1	6.1	4.5	5.6	21.3	6.7
Baccalaureate degree major							
Business and management	72.8	8.2	6.9	7.5	4.5	27.2	3.6
Engineering, math, or science	70.8	7.2	8.7	7.6	5.7	29.2	6.1
Humanities or social science	70.1	8.9	9.7	7.1	4.3	29.9	4.9
Other	71.5	8.2	11.0	5.8	3.6	28.5	4.1
Primary occupation April 1994							
Business and management	76.1	8.0	8.9	5.9	1.3	23.9	—
School teacher	62.2	8.8	18.4	8.7	1.9	37.8	—
Professional	74.8	8.3	9.7	5.9	1.3	25.2	—
Administrative, clerical, support	69.0	10.7	10.8	7.7	1.9	31.0	—
Sales, service	69.3	12.1	9.0	7.5	2.1	30.7	—
Other	76.5	7.9	8.0	6.6	1.0	23.5	—
Degree-granting institution							
Public 4-year	70.6	8.6	9.5	6.8	4.5	29.4	4.8
Private, not-for-profit 4-year	72.2	7.7	9.6	6.6	3.9	27.8	3.9
Other	77.8	4.7	5.4	6.9	5.2	22.2	4.6

— Sample size too small for a reliable estimate.

NOTE: Percentages may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1993 Baccalaureate and Beyond Longitudinal Study First Followup (B&B:93/94), Data Analysis System.

Table 16—Percentage of 1989–90 beginning postsecondary students whose last enrollment ended by December 1992 who had ever been unemployed in 1989–94, and among those, the average duration of unemployment spells and the average total number of months unemployed and the percent unemployed in April 1994, by selected student and institutional characteristics

	Ever unemployed 1989–94	Average duration of unemployment spells (months)	Average total months unemployed	Unemployed April 1994
Total	33.7	7.7	10.3	4.7
Gender				
Male	31.1	7.5	9.8	3.1
Female	35.9	7.9	10.7	6.0
Race–ethnicity				
Asian/Pacific Islander	22.5	—	—	4.9
Black, non-Hispanic	46.1	11.3	15.3	7.6
Hispanic	28.9	9.2	12.1	6.2
White, non-Hispanic	32.5	6.6	8.9	4.1
Age when began postsecondary education				
19 or younger	33.9	6.5	8.7	3.9
20 or older	33.5	9.4	12.4	5.7
Socioeconomic status				
Lowest quartile	40.4	9.7	13.3	6.7
Middle quartiles	31.9	8.2	10.8	4.8
Highest quartile	31.1	4.2	5.6	2.5
Student loans				
Did not take out student loans	31.1	7.3	9.4	3.9
Took out student loans	41.2	8.8	12.3	7.1
Highest degree attained by December 1992				
None	34.4	7.6	10.3	5.5
Last attended 4-year	33.5	6.0	8.0	4.9
Last attended public 2-year	31.5	7.1	9.5	4.2
Last attended private, for-profit	44.7	12.0	15.8	13.5
Certificate	33.0	8.5	11.5	3.1
Associate's degree	30.0	7.0	7.7	2.4
Major during last enrollment spell				
Business and management	34.1	7.4	10.1	6.8
Engineering, math, or science	27.3	7.5	9.9	2.7
Humanities or social science	35.8	7.0	11.1	3.7
Education	34.0	—	—	5.8
Other	35.8	7.7	9.9	4.1

Table 16—Percentage of 1989–90 beginning postsecondary students whose last enrollment ended by December 1992 who had ever been unemployed in 1989–94, and among those, the average duration of unemployment spells and the average total number of months unemployed and the percent unemployed in April 1994, by selected student and institutional characteristics —Continued

	Ever unemployed 1989–94	Average duration of unemployment spells (months)	Average total months unemployed	Unemployed April 1994
Academic year last enrolled				
1989–90	36.4	8.7	12.1	4.7
1990–91	31.2	7.3	9.4	4.0
1991–92	33.0	7.0	8.9	5.2
1992–93	28.9	5.6	7.9	6.0
Level of last institution				
4-year	32.5	6.2	8.0	4.5
2-year	32.0	7.0	9.3	3.6
Less-than-2-year	40.1	10.9	15.0	8.7
Control of last institution				
Public	32.3	6.7	9.0	4.0
Private, not-for-profit	28.8	7.8	9.8	1.8
Private, for-profit	39.6	10.6	14.4	8.2
Level and control of last institution				
Public 4-year	33.2	5.8	7.6	5.4
Private, not-for-profit 4-year	30.3	7.9	9.5	1.4
Public 2-year	30.8	6.9	9.1	3.5
Private, for-profit	39.6	10.6	14.4	8.2
Other	40.5	7.6	10.8	4.1
Primary occupation in 1993				
Clerical	33.7	5.4	7.4	2.8
Craftsman/repair, laborer, or machinist	42.2	6.6	9.1	4.7
Manager/administrator	33.2	5.6	6.7	2.7
Professional	17.9	7.7	11.5	0.5
Sales	33.6	5.3	9.1	9.0
Service	35.7	6.7	10.2	1.4
Other	26.1	5.8	6.8	3.4

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1990 Beginning Postsecondary Students Longitudinal Study—Second Follow-up (BPS:90/94), Data Analysis System.

To place these rates in context, the unemployment rate for the civilian noninstitutional population 25 to 44 years of age was 5.3 percent in January 1994. Taking into consideration education, the January unemployment rate was 2.9 percent for college graduates 25 to 64 years old (including those with graduate degrees) and 5.0 percent for those with some college, but less than a bachelor's degree.[16]

Periods of Unemployment

Some experience with unemployment in the first year after graduating appears to be not unusual for bachelor's degree recipients. Twenty-nine percent of the 1992–93 bachelor's degree recipients had been unemployed for at least one month since graduating (table 15). The percentages were similar for graduates of 4-year public and private, not-for-profit institutions and did not vary according to undergraduate major.

No meaningful gender or racial–ethnic differences were found in terms of spells of unemployment for bachelor's degree recipients, but there were some interesting age differences. Bachelor's degree recipients who were more than 30 years old when they graduated were less likely than younger graduates to have been unemployed since graduating. This may reflect a longer time in the work force prior to graduation. In addition, older students are more likely than younger students to work full time while enrolled.[17] Therefore a greater proportion of older students may have continued with the same job or employer when they graduated. At the same time, however, graduates 30 years or older were more likely than graduates 24 years or younger to have been unemployed for 9 months or more, suggesting that the older group may include more individuals with more severe employability problems.

Broad occupational categories and relatively small sample sizes in some categories make meaningful differences in graduates' periods of unemployment difficult to detect. Graduates with administrative, clerical, or support or teaching occupations were more likely those with business and management or professional occupations to have been unemployed. Most notable among the occupational differences was the relatively high percentage of teachers reporting three to four months of unemployment (18 percent), which was considerably higher than the

---

[16] U.S. Bureau of the Census, *Statistical Abstract of the United States 1996*. Washington, DC: 1996, 413, 415.

[17] In 1989–90, 46 percent of undergraduates 24 years or older worked 40 hours or more per week while enrolled, compared with 23 percent of those less than 24 years old. See U.S. Department of Education, National Center for Education Statistics, *Profile of Older Undergraduates* [National Postsecondary Student Aid Study and Beginning Postsecondary Students Longitudinal Study], NCES 95-167, by Susan P. Choy and Mark K. Premo, Carlyle Maw, project officer (Washington, DC: 1995), 16.

BEST COPY AVAILABLE

percentage in any other occupation (8 to 11 percent). One possible explanation is that some graduates who lined up teaching jobs for the fall did seek, but were unsuccessful at finding, short-term employment until school started; or, if they graduated before June, they may have had trouble finding anything except for the summer.

Although the 1992–93 bachelor's degree recipients who graduated in the summer or fall of 1992 had been in the labor market longer than spring 1993 graduates, they were not any more likely to have been unemployed. However, among those who had been unemployed, summer 1992 graduates were more likely than later graduates to have been unemployed for more than nine months, reflecting their longer time in the labor market.

Information on the unemployment experiences of the nonbaccalaureate group is more limited. Data are available on whether they were ever unemployed between 1989–90 and spring 1994, but not on whether they had been unemployed since they graduated or left postsecondary education. About one-third of the group experienced at least one spell of unemployment between 1989–90 and spring 1994 (table 16). For those who had been unemployed, the average total number of months of unemployment was 10.

There is some apparent variation in the unemployment experiences of the nonbaccalaureate group by student and institutional characteristics. For example, noncompleters who last attended private, for-profit institutions appear to be more likely to have been unemployed than noncompleters who last attended other types of institutions, and engineering, mathematics, or science majors appear to be less likely than those with other majors to have been unemployed. However, small sample sizes make it impossible to determine whether the differences are real or simply statistical artifacts.

Time to Find a First Job

How long it takes to find a job upon leaving school is another aspect of experience with unemployment. About three-quarters (76 percent) of the 1989–90 beginning postsecondary students who left postsecondary education or attained an associate's degree or certificate by December 1992 (and subsequently worked) found their first principal job within a month of graduating or leaving postsecondary education (table 17). Those who attended 4-year or public 2-year institutions were more likely than those who attended private, for-profit institutions to find a job within a month.

Table 17—Percentage distribution of 1989–90 beginning postsecondary students whose last enrollment ended by December 1992 according to the number of months after leaving postsecondary education before obtaining first principal job, by selected student and institutional characteristics

	Months				
	Less than 1	1 to 3	4 to 6	7 to 12	More than 12
Total	76.2	8.6	4.2	5.0	6.1
Gender					
Male	79.5	6.6	3.3	5.5	5.1
Female	73.4	10.2	4.9	4.5	7.0
Race–ethnicity					
Asian/Pacific Islander	68.3	13.4	0.3	0.8	17.3
Black, non-Hispanic	62.3	8.4	4.3	9.1	15.9
Hispanic	73.6	6.5	9.4	8.5	2.1
White, non-Hispanic	78.9	8.7	3.7	3.9	4.8
Age when began postsecondary education					
19 or younger	75.5	9.2	4.7	5.0	5.6
20 or older	77.1	7.7	3.6	4.9	6.8
Socioeconomic status					
Lowest quartile	69.2	8.6	4.9	5.7	11.7
Middle quartiles	76.4	9.0	4.6	5.1	5.0
Highest quartile	82.2	7.6	2.7	4.1	3.4
Student loans					
Did not take out student loans	77.9	7.7	4.2	4.4	5.9
Took out student loans	71.2	11.2	4.2	6.7	6.8
Highest degree attained by December 1992					
None	78.3	7.7	3.3	4.8	5.9
Last attended 4-year	80.1	8.6	2.3	3.2	5.7
Last attended public 2-year	79.6	5.8	3.9	4.9	5.8
Last attended private, for-profit	69.7	11.6	2.2	9.2	7.4
Certificate	66.6	11.9	6.8	6.3	8.4
Associate's degree	83.5	7.5	4.7	2.6	1.8
Major during last enrollment spell					
Business and management	77.4	7.3	5.7	4.2	5.4
Engineering, math, or science	75.9	8.7	2.8	7.0	5.6
Humanities or social science	77.2	5.8	3.6	5.7	7.7
Education	69.0	8.6	5.1	4.4	12.9
Other	73.4	11.6	3.4	4.7	6.9
Academic year last enrolled					
1989–90	77.5	8.9	3.5	4.1	5.9
1990–91	66.9	10.5	6.2	6.3	10.2
1991–92	81.7	6.7	3.3	5.2	3.2
1992–93	86.5	4.6	3.9	3.2	1.9

Table 17—Percentage distribution of 1989–90 beginning postsecondary students whose last enrollment ended by December 1992 according to the number of months after leaving postsecondary education before obtaining first principal job, by selected student and institutional characteristics—Continued

	Months				
	Less than 1	1 to 3	4 to 6	7 to 12	More than 12
Level of last institution					
4-year	80.7	7.9	2.5	3.0	5.9
2-year	78.1	7.1	4.3	4.9	5.6
Less-than-2-year	64.9	14.4	5.7	6.7	8.3
Control of last institution					
Public	78.5	7.5	4.1	4.2	5.8
Private, not-for-profit	78.0	9.1	3.4	2.5	7.0
Private, for-profit	66.6	12.5	5.1	8.4	7.5
Level and control of last institution					
Public 4-year	80.4	8.1	2.4	3.2	6.0
Private, not-for-profit 4-year	81.7	7.0	2.8	2.6	5.9
Public 2-year	79.4	6.3	4.5	4.5	5.4
Private, for-profit	66.6	12.5	5.1	8.4	7.5
Other	65.8	17.9	4.3	3.0	8.9
Primary occupation in 1993					
Clerical	78.6	8.2	5.0	4.8	3.4
Craftsman/repair, laborer, or machinist	75.1	9.7	2.8	6.8	5.6
Manager/administrator	78.5	8.8	3.0	2.1	7.6
Professional	82.5	5.8	0.7	4.8	6.3
Sales	78.2	5.4	1.1	5.0	10.4
Service	69.5	12.6	5.0	4.8	8.1
Other	75.0	6.5	5.7	6.0	6.9

NOTE: Percentages may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1990 Beginning Postsecondary Students Longitudinal Study Second Follow-up (BPS:90/94), Data Analysis System.

Those with either an associate's degree or no award were more likely than those with a certificate to find their jobs within a month (84 percent and 78 percent compared with 67 percent). However, this should not be interpreted to mean that it is more difficult to find a job with a certificate than with no award. Some of those who left without completing a degree or certificate may have left because they had obtained a job and therefore would have experienced no delay between enrollment and employment. In addition, some from all of these groups may have been already working at the job while enrolled and therefore also would have experienced no delay. It should also be kept in mind that the "no award" group includes individuals with a mixture of postsecondary educational experiences that could range from a month at a less-than-4-year institution to three and a half years at a 4-year institution. Consequently, some individuals with no award could have much more postsecondary education than those with a certificate, which might make it easier for them to find a job.

Certain student characteristics were associated with relatively greater ease in finding a job. For example, males were more likely than females to find a job within a month. Also, white, non-Hispanics were more likely than black, non-Hispanics to find a job within a month, and black, non-Hispanics were much more likely to have taken more than 12 months to do so. Finally, those in the highest SES quartile were more likely than those in the lowest quartile to find their job within a month, and those in the lowest quartile were the most likely to take more than 12 months.

BORROWING FOR UNDERGRADUATE EDUCATION

In 1992–93, the average annual cost of attending a postsecondary institution full time (including tuition, fees, and living expenses) was $19,500 at private, not-for-profit 4-year institutions and $11,100 at public 4-year institutions. Attending a public 2-year institution cost somewhat less—an average of $9,400—but attending a private, for-profit institution cost an average of $15,000.[18] When these annual costs are multiplied by the number of years attended, the amounts can be substantial. To help cover these costs, many students borrow, either through a student loan program or from relatives or friends.

This section describes the debt incurred by 1992–93 bachelor's degree recipients and 1989–90 beginning postsecondary students whose last enrollment ended by December 1992 to finance their undergraduate education and how much they still owed in 1994. It also examines the extent to which their career choices and, for bachelor's degree recipients, their further education, are related to borrowing.

AMOUNTS BORROWED

The 1992–93 bachelor's degree recipients were asked to report the total amount they had borrowed to finance their undergraduate education and to include the amounts borrowed from all sources, including relatives and friends as well as student loan programs. The beginning postsecondary students were also asked if they had borrowed from any source, but were asked only about the amounts borrowed through student loan programs. Consequently, care must be exercised in comparing the amounts borrowed by the two groups. Also important to keep in mind when comparing the two groups or making comparisons among subgroups is that student loan programs limit both annual and total borrowing, which may reduce the variation in the amounts borrowed by students at different types of institutions and with different financial circumstances.

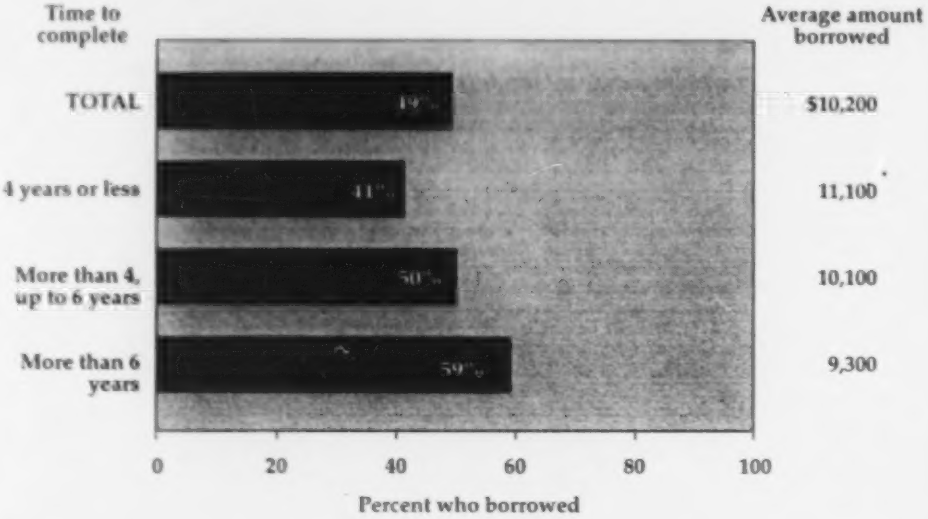
---

[18] U.S. Department of Education, National Center for Education Statistics, *Student Financing of Undergraduate Education 1992–93*, 5.

Bachelor's Degree Recipients

Overall, about one-half (49 percent) of all the 1992–93 bachelor's degree recipients borrowed at some point during their undergraduate education, including borrowing from relatives and friends as well as through student loan programs (table 18 and figure 7). The average total amount borrowed from all sources was about $10,200. Tuition is higher, on average, at private, not-for-profit institutions than at public ones. Reflecting this higher tuition, graduates of private, not-for-profit institutions were more likely than graduates of public institutions to have borrowed (54 percent compared with 46 percent) and borrowed more, on average ($12,800 compared with $8,700). About one out of five graduates of a private, not-for-profit institution borrowed at least $20,000.

Figure 7—Percentage of 1992–93 bachelor's degree recipients who borrowed for their undergraduate education and average amount borrowed, by time to complete degree



SOURCE: U.S. Department of Education, National Center for Education Statistics, 1993 Baccalaureate and Beyond Longitudinal First Followup (B&B:93/940), Data Analysis System.

The longer bachelor's degree recipients took to get their degrees, the more likely they were to have borrowed (59 percent of those who took six years or more to complete their undergraduate education borrowed, 50 percent of those who took from four to six years, and 41 per-

Table 18—Percentage of 1992–93 bachelor's degree recipients who borrowed for undergraduate education, average amounts borrowed, and percentage distribution of those who borrowed by amount borrowed, by selected student and institutional characteristics

	Percent who borrowed	Average amount borrowed	Amount borrowed Less than $5,000	$5,000 to 9,999	$10,000 to 14,999	$15,000 to 19,999	$20,000 or more
Total	49.3	$10,167	28.7	28.4	20.5	10.9	11.5
Gender							
Male	49.7	10,428	28.0	29.0	20.3	11.0	11.8
Female	49.0	9,945	29.3	27.9	20.8	10.7	11.3
Race–ethnicity							
American Indian/Alaskan Native	66.2	11,204	29.7	22.2	17.9	9.8	20.4
Asian/Pacific Islander	42.7	11,377	26.4	34.2	17.1	9.5	12.8
Black, non-Hispanic	64.1	9,570	33.7	22.4	23.9	9.5	10.6
Hispanic	60.7	7,966	41.5	26.4	14.9	9.0	8.3
White, non-Hispanic	47.8	10,321	27.4	29.0	20.8	11.2	11.7
Age received bachelor's degree							
24 or younger	45.3	10,360	28.9	27.7	20.3	11.2	12.0
25–29	65.2	9,626	25.9	30.6	23.8	10.5	9.3
30 or older	55.1	9,725	30.9	28.7	18.5	9.8	12.1
Income and dependency level							
Less than $30,000	67.3	10,735	28.1	23.1	23.2	14.8	10.8
$30,000–59,999	47.8	9,620	30.7	27.2	21.6	10.9	9.6
$60,000 or more	28.7	11,894	29.3	26.0	16.8	10.3	17.6
Independent, any income	59.6	9,656	27.5	31.5	20.4	10.0	10.6
Time from postsecondary entry to bachelor's degree							
4 years or less	41.4	11,063	26.9	26.6	22.1	11.4	13.1
More than 4, up to 6 years	50.1	10,126	29.0	28.7	19.3	12.1	10.9
More than 6 years	59.4	9,270	29.2	31.2	21.2	9.0	9.4
Degree-granting institution							
Public 4-year	46.4	8,696	33.7	30.2	19.3	9.4	7.5
Private, not-for-profit 4-year	54.1	12,760	20.4	24.3	23.0	13.3	19.0
Other	61.5	10,261	25.6	36.5	17.7	13.0	9.3
First postsecondary institution							
Public 4-year	45.9	9,023	32.4	31.5	18.1	9.4	8.6
Private, not-for-profit 4-year	53.2	12,482	21.1	23.5	23.1	15.0	17.3
Public 2-year	52.8	9,227	30.0	30.3	23.0	9.0	7.7
Other	58.1	10,528	23.6	26.5	25.2	12.9	11.8
Baccalaureate degree major							
Business and management	46.1	10,251	31.1	29.9	17.1	9.5	12.5
Engineering, math, or science	53.5	9,966	30.1	27.5	19.9	11.4	11.1
Humanities or social science	44.9	9,851	28.4	27.5	22.9	10.0	11.3
Other	52.2	10,385	27.0	28.6	21.3	11.7	11.4

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1993 Baccalaureate and Beyond Longitudinal Study First Followup (B&B:93/94), Data Analysis System.

cent of those who finished in four years or less). However, those who finished in four years or less borrowed more, on average ($11,000), than those who took more than six years to finish ($9,300). This may reflect, at least in part, the fact that graduates of private, not-for-profit institutions (who borrowed more, on average, than their peers at public institutions) were more likely to finish in four years or less (65 percent compared with 34 percent).[19] In addition, some of those who took six years or longer to finish may have taken longer because they were working and using their earnings to reduce the amount they needed to borrow.

Although some bachelor's degree seekers who start at 2-year public institutions rather than 4-year institutions may do so in order to reduce the total cost of obtaining their degree, 1992–93 bachelor's degree recipients who started at public 2-year institutions were actually more likely than those who started at public 4-year institutions to borrow at some point during their undergraduate education, and they borrowed about the same amount, on average. Those starting at 2-year institutions may have been more likely to borrow at least in part because they took longer to complete their postsecondary studies (27 percent took more than six years, compared with 13 percent of those who started at public 4-year institutions).[20] They may also have had greater overall financial need (which is related primarily to family income and the cost of the institution attended). In other words, they may indeed have started at a 2-year institution to keep their costs down, but then had greater need than the average public 4-year student when they later transferred to a 4-year institution. The fact that bachelor's degree recipients who started at 2- and 4-year institutions borrowed similar amounts in total may reflect, at least in part, the fact that student loan programs limit the amounts borrowed.

Noncompleters and Associate's Degree or Certificate Recipients

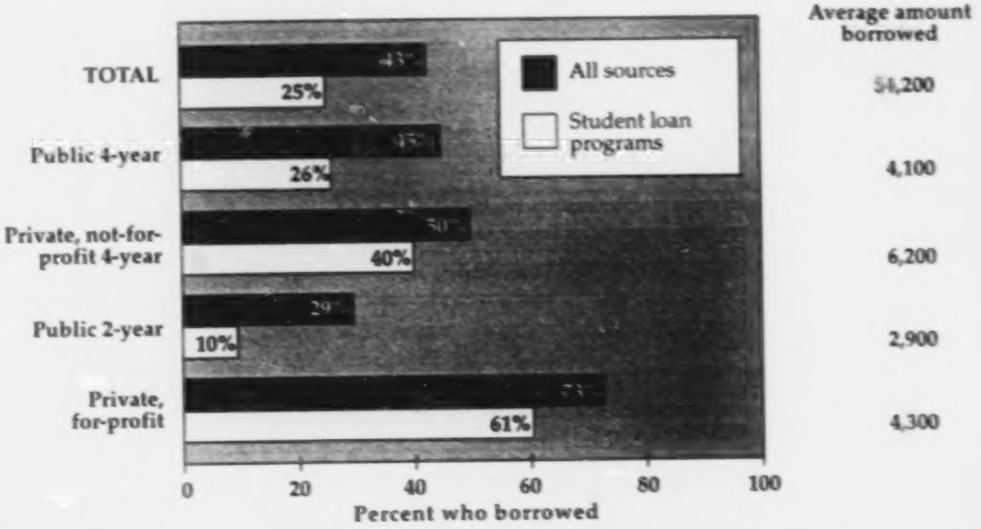
Overall, 43 percent of the noncompleters and associate's degree or certificate recipients reported borrowing from some source (including family and friends) for their undergraduate education, and 25 percent reported borrowing through a student loan program (table 19 and figure 8). The variation by type of institution was substantial. For example, 61 percent of those who last attended a private, for-profit institution borrowed through a student loan program, compared with 10 percent who last attended a public 2-year institution. The average amount borrowed through student loan programs ranged from $2,900 at public 2-year institutions to $6,200 at private, not-for-profit 4-year institutions.

---

[19] U.S. Department of Education, National Center for Education Statistics, *A Descriptive Summary of 1992–93 Bachelor's Degree Recipients 1 Year Later*, 22.

[20] U.S. Department of Education, National Center for Education Statistics, *A Descriptive Summary of 1992–93 Bachelor's Degree Recipients 1 Year Later*, 25.

Figure 8—Percentage of 1989–90 beginning postsecondary students whose enrollment ended by December 1992 who took out loans, by last institution attended and source of loan



SOURCE: U.S. Department of Education, National Center for Education Statistics, 1990 Beginning Postsecondary Students Longitudinal Study—Second Follow-up (BPS:90/94), Data Analysis System.

The likelihood of borrowing and the average amount borrowed through student loan programs also varied by degree attainment. Those who left postsecondary education with no degree were the least likely to take out a student loan (19 percent, compared with 43 percent of certificate earners and 34 percent of associate's degree recipients). This pattern might reflect a shorter time or intensity of enrollment for at least some noncompleters: for example, students who enrolled only in 1989–90 were less likely to borrow than those who enrolled longer. It also might indicate less commitment to postsecondary education and less willingness on the part of noncompleters to borrow.

Variation among noncompleters reflects the costs associated with the type of institution students last attended. Those who left a public 2-year institution were the least likely to have

Table 19—Percentage of 1989–90 beginning postsecondary students whose last enrollment ended by December 1992 who borrowed for undergraduate education, who took out student loans, and average amount of student loans, by selected student and institutional characteristics

	Borrowed for education	Took out student loans	Student loan amount
Total	42.6	25.3	$4,178
Highest degree attained by December 1992			
None	37.0	18.6	3,635
Last attended 4-year	45.4	29.2	4,399
Last attended public 2-year	27.8	8.1	2,716
Last attended private, for-profit	68.6	54.0	3,604
Certificate	54.9	43.0	4,217
Associate's degree	56.0	33.9	6,254
Academic year last enrolled			
1989–90	33.4	19.5	3,487
1990–91	47.5	31.8	4,125
1991–92	48.6	25.6	4,876
1992–93	58.5	36.6	5,041
Level of last institution			
4-year	46.1	29.5	4,659
2-year	34.9	16.5	4,053
Less-than-2-year	62.8	47.8	3,927
Control of last institution			
Public	32.5	13.1	3,468
Private, not-for-profit	50.2	40.0	5,900
Private, for-profit	73.2	60.5	4,319
Level and control of last institution			
Public 4-year	45.0	26.4	4,141
Private, not-for-profit 4-year	49.9	40.5	6,154
Public 2-year	29.0	9.5	2,947
Private, for-profit	73.2	60.5	4,319
Other	40.7	22.6	4,708

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1990 Beginning Postsecondary Students Longitudinal Study—Second Follow-up (BPS:90/94), Data Analysis System.

borrowed through a student loan program (8 percent, compared with 29 percent of those who last attended a 4-year institution and 54 percent of those who last attended a private, for-profit institution).

Associate's degree recipients borrowed more, on average ($6,300), through student loan programs than those who earned certificates ($4,200), reflecting the longer time they were enrolled. Among those who did not complete their studies, borrowers took out student loans averaging a total of $3,600.

AMOUNTS OWED BY BORROWERS IN 1994

Bachelor's Degree Recipients

By 1994, 17 percent of 1992–93 bachelor's degree recipients who had borrowed as undergraduates no longer owed any money (table 20). In some cases, they may have paid off the loan (possibly with help from their parents or others), while in others they may have had the loan forgiven (especially if the loans were from parents or other relatives). Not all of these loans were necessarily paid back or forgiven after graduation; some may have been paid back or forgiven while the graduate was still enrolled. Another 28 percent of 1992–93 bachelor's degree recipients who had borrowed as undergraduates owed less than $5,000, and 26 percent owed between $5,000 and $9,999. The remaining approximately 30 percent owed $10,000 or more. Among those who still owed, the average amount owed was $9,000. (Among all borrowers, the average total amount borrowed was $10,200, table 18.)

As one would expect, those from groups that tended to borrow more as undergraduates also tended to owe more a year after graduation. Borrowers who graduated from private, not-for-profit institutions borrowed more, on average, than borrowers who graduated from public institutions ($12,800 compared with $8,700, table 18). Similarly, among those who owed in 1994, graduates from private, not-for-profit institutions owed more than graduates of public institutions ($11,300 compared with $7,800, table 20). Graduates of private, not-for-profit institutions were much more likely than graduates of public institutions to owe more than $10,000.

Table 20—Percentage distribution of 1992–93 bachelor's degree recipients who borrowed according to the amount still owed for their undergraduate education and average amount owed by those who still owed, by selected student and institutional characteristics: 1994

	Amount of undergraduate debt still owed						
	None	Less than $5,000	$5,000 to 9,999	$10,000 to 14,999	$15,000 to 19,999	$20,000 or more	Average amount owed
Total	16.5	27.7	25.5	16.2	7.9	6.3	$9,068
Gender							
Male	17.3	27.7	24.3	16.7	7.9	6.0	9,148
Female	15.8	27.7	26.5	15.7	7.8	6.6	9,001
Race–ethnicity							
American Indian/Alaskan Native	3.4	37.3	15.6	14.3	12.1	17.4	10,151
Asian/Pacific Islander	23.9	15.7	34.0	12.3	6.5	7.7	10,808
Black, non-Hispanic	14.4	28.5	24.5	18.5	7.5	6.6	9,035
Hispanic	15.4	44.3	18.7	10.7	6.9	4.0	6,988
White, non-Hispanic	16.5	27.0	25.8	16.5	8.0	6.3	9,132
Age received bachelor's degree							
24 or younger	14.2	29.3	25.6	17.1	8.0	5.9	8,888
25–29	18.9	26.3	26.7	16.4	5.9	5.8	8,900
30 or older	23.0	23.1	24.1	12.4	9.0	8.4	10,012
Time from postsecondary entry to bachelor's degree							
4 years or less	13.7	25.4	26.4	19.6	8.0	7.0	9,633
More than 4, up to 6 years	14.0	31.2	25.4	15.4	8.5	5.5	8,552
More than 6 years	22.0	25.5	26.1	13.4	6.4	6.7	9,144
Degree-granting institution							
Public 4-year	18.0	32.7	26.1	13.3	6.2	3.8	7,777
Private, not-for-profit 4-year	14.1	19.0	23.3	21.7	10.7	11.2	11,338
Other	13.7	25.1	35.7	11.6	9.7	4.2	8,753

NOTE: Percentages may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1993 Baccalaureate and Beyond Longitudinal Study First Followup (B&B:93/94), Data Analysis System.

Noncompleters and Associate's Degree or Certificate Recipients

By spring 1994, many of the noncompleters and associate's degree or certificate recipients in the analysis group who had borrowed through student loan programs had been out of school for several years. Consequently, the borrowers in this group were more likely than the bachelor's degree recipients to no longer owe any money (23 percent, table 21, compared with 17 percent, table 19). Another 61 percent of the nonbaccalaureate group owed less than $5,000, and the remaining 16 percent still owed $5,000 or more (table 21). Among noncompleters, differences in the percentages no longer owing by type of institution last attended were not statistically significant.

Table 21—Percentage distribution of 1989–90 beginning postsecondary students whose last enrollment ended by December 1992 and who borrowed according to the amount still owed, and average amount owed, by selected characteristics: 1994

	Amount of undergraduate debt still owed			
	None	Less than $5,000	$5,000 or more	Average amount owed
Total	23.1	60.8	16.1	$3,165
Highest degree attained by December 1992				
None	28.7	57.9	13.4	2,945
Last attended 4-year	25.8	52.8	21.4	3,759
Last attended public 2-year	36.4	53.6	10.0	2,381
Last attended private, for-profit	25.9	65.3	8.9	2,519
Certificate	18.2	66.7	15.1	2,952
Associate's degree	15.5	54.6	29.9	4,547
Level of last institution				
4-year	23.1	53.8	23.1	3,892
2-year	26.7	58.2	15.1	3,227
Less-than-2-year	19.8	67.7	12.6	2,683
Control of last institution				
Public	28.9	57.2	13.9	2,856
Private, not-for-profit	21.6	55.1	23.3	4,447
Private, for-profit	19.8	64.6	15.6	3,078
Level and control of last institution				
Public 4-year	24.5	54.8	20.7	3,536
Private, not-for-profit 4-year	19.9	50.3	29.8	4,786
Public 2-year	34.5	56.3	9.2	2,330
Private, for-profit	19.8	64.6	15.6	3,078
Other	21.5	67.9	10.6	3,075

NOTE: Percentages may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1990 Beginning Postsecondary Students Longitudinal Study—Second Follow-up (BPS:90/94) Data Analysis System.

BORROWING AND CAREER CHOICES

Many worry that students who borrow to finance their education might have to be more concerned than those do not borrow about factors such as a good starting salary, a job's income potential, and job security, thus limiting their career choices. Bachelor's degree recipients were asked some questions in the B&B survey that can help shed some light on this issue. First, they were asked whether various factors (including financial ones) were important to them in determining the type of work they planned to do in the future. Second, they were asked if their April 1994 job was related to their degree, and if not, why they took the job. If they were feeling pressured by their loan obligations, one might expect borrowers to be more concerned than nonborrowers about financial factors in choosing a career and to be more likely to take jobs unrelated to their degree for financial reasons. The responses of bachelor's degree recipients to these questions provide no evidence that borrowers are making career choices differently than nonborrowers.

The 1992–93 bachelor's degree recipients were asked whether various factors were important to them in determining the type of work they planned to do in the future. Two factors very relevant to their ability to repay their loans were "good income potential" and "job security." Borrowers and nonborrowers were about equally likely to indicate that these were important to them (table 22). However, both borrowers and nonborrowers were more likely to indicate that "interesting work" and "intellectual work" were important to them than they were to indicate that job security was important.

Overall, 55 percent of 1992–93 bachelor's degree recipients reported that their job in April 1994 was closely related to their degree, and 20 percent reported that it was somewhat related (table 23). The remaining 25 percent reported that their job was not at all related. Nonborrowers were slightly more likely than borrowers to have an unrelated job (26 percent to 24 percent), although there is no obvious reason why this would be so. Among graduates who took jobs that were unrelated to their degree, borrowers were not any more likely than nonborrowers to take a job for financial reasons. Among bachelor's degree recipients whose April 1994 job was not at all related to their degree, 22 percent said their main reason for taking the job was that it was the only one they could find, and 25 percent said the pay was better than that in other jobs (table 24). The percentages of graduates who took jobs for these reasons were similar for borrowers and nonborrowers.

Table 22—Percentage of 1992–93 bachelor's degree recipients who reported that various factors were important to them in determining the type of work they planned to do in the future, by borrowing status and amount borrowed for undergraduate education: 1994

	Good starting income	Good income potential	Job security	Interesting work	Intellectual work	Interaction with others
Total	34.6	45.3	36.3	42.4	44.5	32.7
Borrowing for undergraduate education						
Did not borrow	36.0	45.5	36.6	44.0	45.8	33.7
Borrowed	33.0	44.8	35.0	40.1	42.9	31.5
Less than $5,000	32.5	41.6	33.6	36.6	40.1	30.3
$5,000–9,999	32.2	46.3	35.7	41.8	42.1	30.3
$10,000–14,999	31.9	44.8	34.6	41.1	47.1	31.5
$15,000–19,999	36.6	49.1	36.5	42.0	41.4	35.1
$20,000 or more	34.5	44.9	36.0	41.4	46.0	33.8

NOTE: Percentages may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1993 Baccalaureate and Beyond Longitudinal Study First Followup (B&B:93/94), Data Analysis System.

Table 23—Percentage distribution of 1992–93 bachelor's degree recipients by relationship between April 1994 job and degree, by borrowing status and amount borrowed for undergraduate education

	Closely related	Somewhat related	Not at all related
Total	54.7	20.3	25.0
Borrowing for undergraduate education			
Did not borrow	53.6	20.3	26.1
Borrowed	56.1	20.3	23.5
Less than $5,000	57.0	21.7	21.4
$5,000–9,999	55.2	21.7	23.2
$10,000–14,999	57.3	17.9	24.8
$15,000–19,999	56.2	19.0	24.9
$20,000 or more	54.5	19.1	26.3

NOTE: Percentages may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1993 Baccalaureate and Beyond Longitudinal Study First Followup (B&B:93/94), Data Analysis System.

Table 24—Of 1992–93 bachelor's degree recipients whose April 1994 job was not at all related to their degree, percentage who gave various reasons for taking that job

	Only job could find	Pay better	Held job before graduation	Curious about type of work	Better opportunities for advancement	Opportunity to help people/be useful to society	Wanted manual occupation	Other
Total	22.0	25.2	5.5	5.4	5.3	2.0	0.6	34.2
Borrowing for undergraduate education								
Did not borrow	21.7	24.8	5.7	6.4	5.3	2.1	0.8	33.4
Borrowed	23.2	25.6	5.5	4.1	5.4	1.9	0.4	34.0

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1993 Baccalaureate and Beyond Longitudinal Study First Followup (B&B:93/94), Data Analysis System.

Beginning postsecondary students were also asked about the importance of various factors in determining the kind of work they planned to be doing, but, in contrast to the bachelor's degree recipients, borrowers and nonborrowers were different. To virtually all the noncompleters and associate's degree or certificate recipients included in this analysis, job security and permanence were important in determining the kind of work they planned to do for most of their lives (88 percent said these factors were "very important" and another 11 percent said they were "somewhat important") (table 25). However, those who had taken out student loans were more likely than those who had not to rate them as "very important" in determining their future work (92 percent compared with 86 percent).

Table 25—Percentage distribution of 1989–90 beginning postsecondary students whose last enrollment ended by December 1992 according to importance of job security and permanence in determining the kind of work they planned to be doing for most of their lives: 1994

	Not important	Somewhat important	Very important
Total	1.4	10.7	87.9
Student loans			
Did not take out student loans	1.3	12.3	86.4
Took out student loans	1.6	6.0	92.4

NOTE: Percentages may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1990 Beginning Postsecondary Students Longitudinal Study—Second Follow-up (BPS:90/94) Data Analysis System.

Direct comparisons between the baccalaureate and nonbaccalaureate groups must be made with caution because different questions were asked in the two studies. Nevertheless, there was no evidence that career choice was related to borrowing for bachelor's degree recipients, but some limited evidence that it might be for the nonbaccalaureate group.

BORROWING AND PLANS FOR GRADUATE SCHOOL

Bachelor's degree recipients immediate career choices do not appear to be related to borrowing. However, borrowing does appear to have some effect on whether they enroll in graduate school right away, with borrowers slightly less likely than nonborrowers to apply to graduate school (27 percent versus 31 percent) (table 26).

Table 26—Percentage of 1992–93 bachelor's degree recipients who applied to graduate or professional school, the percentage accepted among those who applied, and the percentage who considered applying among those who did not apply, by amount borrowed and GPA: 1994

	Applied to graduate/ professional school	Accepted if applied	Considered graduate/ professional education among those who did not apply
Total	28.7	88.0	73.0
Amount borrowed			
Did not borrow	30.5	88.7	71.1
Borrowed	27.2	87.3	75.2
Less than $5,000	27.8	87.3	76.8
$5,000–9,999	28.5	85.5	74.6
$10,000–14,999	24.8	89.7	74.5
$15,000–19,999	25.2	84.8	75.6
$20,000 or more	29.0	90.4	74.0
GPA (4.0 scale)			
Less than 3.0	20.2	85.5	71.0
3.0 or above	35.2	89.4	75.1

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1993 Baccalaureate and Beyond Longitudinal Study First Followup (B&B:93/94), Data Analysis System.

Bachelor's degree recipients who said that they had considered applying to graduate school but then had not applied were asked the primary reason they had not applied. Ten percent of those who had borrowed as undergraduates said that having too much undergraduate debt was their main reason for not immediately enrolling in graduate school (table 27). Five percent of those who borrowed less than $5,000 gave this reason, but 20 percent of those who borrowed $20,000 or more did so. Another roughly 20 percent of those who borrowed gave other financially related reasons for deciding against graduate school: 12 percent said graduate school cost too much, was not worth it, or they could not afford it; 6 percent said they had too much other debt; and 3 percent said they could not get enough financial aid. Those who had not borrowed were slightly less likely to give "cost too much" and "too much other debt" as their main reasons deciding against graduate school.

Table 27—Percentage of 1992–93 bachelor's degree recipients who had considered applying to graduate school but did not apply who gave various reasons as the primary reason for not applying, by borrowing status and amount borrowed for undergraduate education: 1994

	Too much undergraduate debt	Too much other debt	Not enough financial aid	Cost-related*	Personal	Work-related	Undecided what to study	Other academic	Other
Total	5.8	4.2	3.1	10.7	21.1	33.3	3.4	1.5	16.9
Amount borrowed									
Did not borrow	1.5	2.8	2.8	9.5	22.8	37.4	4.0	1.9	17.4
Borrowed	10.1	5.6	3.4	11.7	19.2	29.9	2.6	1.2	16.4
Less than $5,000	5.1	5.2	3.7	10.4	19.0	33.3	2.6	1.2	19.6
$5,000–9,999	8.3	5.1	4.1	13.3	20.5	27.9	2.7	1.8	16.4
$10,000–14,999	11.7	7.8	2.3	10.2	21.5	28.8	2.6	1.4	13.7
$15,000–19,999	14.8	4.0	3.6	11.6	14.9	32.1	2.5	0.4	16.2
$20,000 or more	19.8	5.4	2.6	14.0	16.4	26.0	2.4	0.2	13.2
GPA (4.0 scale)									
Less than 3.0	6.3	5.0	3.0	12.2	20.3	33.3	2.9	2.0	15.0
3.0 or above	5.3	3.5	3.3	9.2	21.5	33.6	3.8	1.2	18.6

*Cost too much; not worth it; cannot afford it.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1993 Baccalaureate and Beyond Longitudinal Study First Followup (B&B:93/94), Data Analysis System.

Additional possible evidence of a negative relationship between undergraduate borrowing and subsequent graduate or other postsecondary enrollment was the earlier finding that nonborrowers were more likely than borrowers to be enrolled only, while the two groups were about equally likely to be combining work and enrollment (table 7). These findings, however, do not take into account the relationships between either further enrollment or undergraduate borrowing and various student and institutional characteristics. Examining how enrollment and undergraduate borrowing are associated without considering these relationships may provide misleading results.

Several statistical methods are available to examine the relationship between two variables while holding other variables constant. Here, a linear a regression model was used to describe the relationship between immediate enrollment for further education and undergraduate borrowing while adjusting for the covariance of independent variables.[21] The dependent variable was defined as the percentage of 1992–93 bachelor's degree recipients who were enrolled for graduate or other postsecondary education in April 1994. They might have been enrolled only or both working and enrolled. The independent variables included gender, race–ethnicity, age when they received their degree, whether or not they borrowed from any source for their undergraduate education, type of institution from which they graduated, undergraduate major, and grades (GPA).

The results of the multivariate analysis are displayed in table 28. The negative impact of undergraduate borrowing on immediate graduate or other postsecondary enrollment was confirmed. Among 1992–93 bachelor's degree recipients, borrowers were less likely than nonborrowers to be enrolled in graduate or other postsecondary education in April 1994. This relationship held regardless of whether they borrowed less than $5,000 or $5,000 or more. The B&B data, because they were collected only one year after graduation, do not permit any examination of longer term effects. However, because the 1995–96 NPSAS includes graduate students of all ages, it will be possible to use these data to examine the relationship between undergraduate borrowing and timing of graduate enrollment.

---

[21] See appendix B for a detailed discussion of the technique used in this section.

Table 28—Percentage of 1992–93 bachelor's degree recipients who were enrolled for further education in April 1994, and the adjusted percentage after taking into account the covariation of the variables listed in the table[1]

	Unadjusted percentage[2]	Adjusted percentage[3]	WLS coefficient[4]	Standard error[5]
Total	17.9	17.9	36.6	0.7
Gender				
Male	18.3	19.0	(†)	(†)
Female	17.6	16.9*	-2.1	0.5
Race–ethnicity				
American Indian/Alaskan Native	14.7	18.6	1.2	5.4
Asian/Pacific Islander	20.6	19.7	2.3	1.7
Black, non-Hispanic	16.7	20.3*	3.0	1.3
Hispanic	19.9	21.5*	4.1	1.3
White, non-Hispanic	17.7	17.4	(†)	(†)
Age received bachelor's degree				
24 or younger	19.2	19.1	(†)	(†)
25–29	10.6*	11.9*	-7.1	0.7
30 or older	17.4	17.1*	-2.0	0.9
Borrowing for undergraduate education				
Did not borrow	19.7	19.4	(†)	(†)
Less than $5,000	16.6	16.3*	-3.1	0.6
$5,000 or more	15.9*	16.4*	-3.0	0.5
Degree-granting institution				
Public 4-year	17.8	18.1	(†)	(†)
Private, not-for-profit 4-year	18.4	18.2	0.1	0.9
Other	14.5	1.4*	-16.7	5.0
Baccalaureate degree major				
Business and management	9.9*	10.2*	-19.0	1.0
Education	19.2*	18.9*	-10.4	0.8
Engineering	20.9*	21.0*	-8.3	1.4
Math or science	29.6	29.3	(†)	(†)
Health or social services	16.4*	16.7*	-12.5	1.2
Humanities or social science	21.0*	20.5*	-8.8	0.9
Other	15.0*	15.6*	-13.7	0.9
GPA (4.0 scale)				
Less than 3.0	13.2*	13.1*	-8.6	0.5
3.0 or above	21.6	21.7	(†)	(†)

*p ≤ .05.

†Not applicable for reference group.

[1] The group in italics is the reference group for comparison.

[2] Estimates from the B&B: 93/94 Data Analysis System.

[3] Percentages adjusted for differences associated with other variables in the table (see appendix B for details).

[4] Weighted least squares (WLS) coefficient (see appendix B for details). Note that the coefficients presented here were multiplied by 100 in order to represent the proportional difference between each category and its base comparison group.

[5] Standard error of WLS coefficient, adjusted for design effect (see appendix B for details).

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1993 Baccalaureate and Beyond Longitudinal Study First Follow-up (B&B: 93/94), Data Analysis System.

LOAN REPAYMENT AND DEBT BURDEN

Most student loan programs require borrowers to begin repayment six months after they leave school, although repayment can be deferred for a variety of reasons. For example, payments can be deferred if the borrower is enrolled in postsecondary education at least half time, is unemployed, is participating in a qualifying service program such as the Peace Corps, or has an approved hardship (e.g. medical or financial). The terms for loans from families or friends are negotiated by the parties involved. Repayment schedules for these loans may be formal or informal, and some borrowers may even have their loans forgiven. The first part of this section describes the repayment status of the bachelor's degree recipients and noncompleters and associate's degree or certificate recipients and the amounts of their monthly payments—for all education loans for the former group and for student loans for the latter.

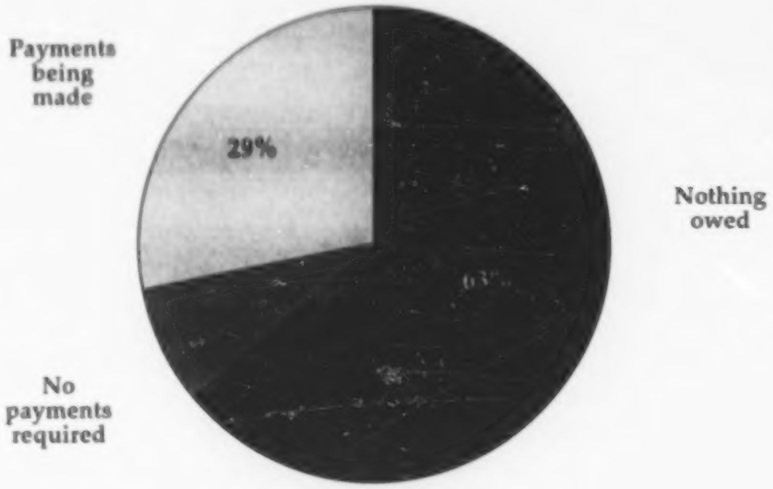
Understanding the extent to which education loan payments impose a financial burden on borrowers requires knowing something about the financial circumstances of the borrowers as well as the size of their payments. Therefore, this section also examines the amount of the payments in relation to other aspects of borrowers' financial circumstances, such as earnings, other expenses, and, if married, their spouse's educational debt. To complete the picture, this section also looks for links between borrowing and lifestyle choices that might indicate that education loan payments are burdensome. Specifically, it examines whether students who borrow marry later or live at home more often than those who do not borrow, and whether or not they are less able to save for major items such as a house or further education.

REPAYMENT STATUS

Bachelor's Degree Recipients

The majority of 1992–93 bachelor's degree recipients (63 percent) had no debt a year after graduating, either because they had never borrowed or because they had repaid their loans (table 29 and figure 9). Another 8 percent owed money but were not required to make payments at the time, either because they were enrolled at least half time, were in the grace period, had a deferment because of unemployment or hardship, or had taken loans only from family or friends and were not being required to make payments. Overall, 29 percent of all 1992–93 bachelor's degree recipients were required to make loan payments in 1994.

Figure 9—Percentage distribution of 1992–93 bachelor's degree recipients according to repayment status in 1994



SOURCE: U.S. Department of Education, National Center for Education Statistics, 1993 Baccalaureate and Beyond Longitudinal First Followup (B&B:93/940), Data Analysis System.

Because repayment can be deferred as long as a borrower is enrolled in postsecondary education at least half time, the percentage of bachelor's degree recipients required to make loan payments varied with their enrollment status. Among 1992–93 bachelor's degree recipients who were not enrolled for further education in spring 1994, 32 percent were required to make loan payments, and among those enrolled part time, 22 percent were required to do so. Although most student loan programs do not require borrowers who are enrolled full time to make payments, 7 percent of such borrowers did in fact report making or owing payments. These payments might have been on loans from families or from sources other than student loan programs; they might have been voluntary repayments; or students enrolled full time in spring 1994 might have started making payments earlier, when they were not enrolled at least half time and either had not requested or not yet received a deferment.

Table 29—Percentage distribution of 1992–93 bachelor's degree recipients according to monthly loan payment status, by enrollment status: 1994

		No payments	
	Payments required	No payments required	No undergraduate debt
Total	28.7	8.2	63.2
Enrollment status April 1994			
Not enrolled	32.4	4.9	62.8
Enrolled full time	6.6	28.9	64.5
Enrolled part time	21.5	12.1	66.5

NOTE: Percentages may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, Nationai Center for Education Statistics, 1993 Baccalaureate and Beyond Longitudinal Study First Followup (B&B:93/94), Data Analysis System.

Noncompleters and Associate's Degree or Certificate Recipients

Overall, 16 percent of the noncompleters and associate's degree or certificate recipients were making payments on their student loans in spring 1994; the remaining 84 percent either had not taken out a student loan or had paid back their loans (table 30). Noncompleters were less likely than associate's degree or certificate recipients to be making payments.

Because 84 percent of the nonbaccalaureate group as a whole was not making payments on student loans, this group appears to be to be more debt free in 1994 than bachelor's degree recipients (63 percent of whom were debt free at this time, table 29), but the comparison must be made with caution. Data on bachelor's degree recipients' repayments apply to loans from all sources, while data on the nonbaccalaureate group's repayments applies only to loans made through student loan programs. If only loans through student loan programs were included in calculating the percentage of bachelor's degree recipients who had no debt, the percentage probably would be greater than 63 percent. However, because very few bachelor's degree recipients borrowed from relatives or friends (only 4 percent of those who owed in spring 1994 had these loans[22]), excluding these loans would make little difference. Thus, it seems safe to conclude that the nonbaccalaureate group was more debt free.

---

[22] U.S. Department of Education, National Center for Education Statistics, Baccalaureate and Beyond Study (B&B:93/94), Data Analysis System.

Table 30—Percentage distribution of 1989–90 beginning postsecondary students whose last enrollment ended by December 1992 according to student loan repayment status and percentage of those making payments who were receiving help with the payments, by selected student characteristics: 1994

	Repayment status		Receiving help with payments (if making payments)
	Making payments	Not making payments	
Total	16.0	84.0	13.1
Socioeconomic status			
Lowest quartile	18.6	81.4	7.1
Middle quartiles	18.3	81.7	16.5
Highest quartile	8.4	91.6	10.3
Highest degree attained by December 1992			
None	10.6	89.4	12.8
Last attended 4-year	19.0	81.0	14.9
Last attended public 2-year	4.0	96.0	6.6
Last attended private, for-profit	30.0	69.9	15.5
Certificate	30.0	70.0	12.7
Associate's degree	24.1	75.9	15.3

—Sample size too small for a reliable estimate.

NOTE: Percentages may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1990 Beginning Postsecondary Students Longitudinal Study—Second Follow-up (BPS:90/94) Data Analysis System.

Among the noncompleters and associate's degree or certificate recipients owing money on student loans in spring 1994, 82 percent were making payments on their student loans; of those who were not repaying their loans, 45 percent were not employed in April 1994.[23] The rest could have had hardship or service deferments or been in default. Because none from this group had been enrolled since December 1992, none would have still been in the enrollment grace period for federal loans.

Family and friends sometimes help borrowers repay their loans. In spring 1994, 13 percent of the nonbaccalaureate group who were making payments were receiving help from relatives or friends, but the vast majority (87 percent) were making payments on their own. Whether or not an individual was receiving help was related to the family's socioeconomic status (SES): 7 percent of those in the lowest SES quartile were receiving help, compared with 17 percent of those in the two middle quartiles. Similar percentages of those owing less than $5,000 and $5,000 to $9,999 received help: 13 percent and 11 percent, respectively.[24]

---

[23] U.S. Department of Education, National Center for Education Statistics, 1990 Beginning Postsecondary Students Longitudinal Study—Second Follow-up, (BPS:90/94), Data Analysis System.

PAYMENT AMOUNTS

A borrower's monthly payment for student loans depends on the size of the loan and the interest rate at which the loan was made. The Stafford Loan program, the most commonly used undergraduate loan program, calls for a 10-year repayment schedule, with a minimum monthly payment of $50. If, for example, a student borrowed $1,000 or less at 8-percent interest, the monthly payment would be $50. For a $5,000 loan at that interest rate, the monthly payment would be $61, and for a $10,000 loan, $120. As indicated above, payments on loans from relatives and friends are negotiated by the lender and borrower.

For the analysis of loan repayment and debt burden that follows, individuals whose monthly loan payments were more than 50 percent of their monthly salary were excluded. For individuals in this category, reported payments were examined along with the amount of their loan and the amount they would have been paying if their loan carried an 8-percent interest rate. In almost every case, the reported payment greatly exceeded the expected amount (and sometimes even exceeded their salary). While many individuals pay back their loans more quickly than is required, it did not seem credible that they would voluntarily increase their payments to the point that they were spending more than half their monthly salary to repay their loans. Because including such individuals greatly increases the average, excluding them from the analysis seemed to make sense.

About 60 percent of the 1992–93 bachelor's degree recipients who were in repayment were paying between $50 and $150 per month on loans from all sources (including relatives and friends), with an average payment of $136 (table 31 and figure 10). Reflecting the greater average amounts borrowed at private, not-for-profit institutions, bachelor's degree recipients from these institutions had higher average monthly payments than their counterparts who graduated from public institutions ($163 per month compared with $121).

---

[24] U.S. Department of Education, National Center for Education Statistics, 1990 Beginning Postsecondary Students Longitudinal Study—Second Follow-up, (BPS:90/94), Data Analysis System.

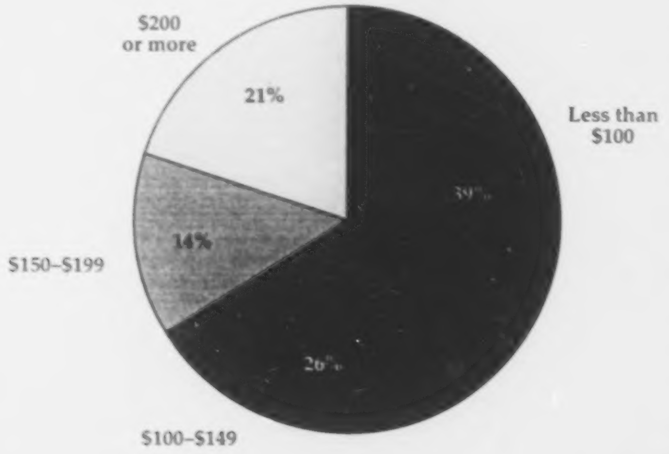
Table 31—Percentage distribution of 1992–93 bachelor's degree recipients in repayment according to monthly education loan payments and average amount of payment, by selected student and institutional characteristics: 1994

	Monthly education loan payments						
	Less than $50	$50 to 99	$100 to 149	$150 to 199	$200 to 249	$250 or more	Average payment
Total	4.8	34.3	26.3	14.2	9.7	10.8	$136
Total undergraduate debt still owed in 1994							
Less than $5,000	9.9	61.9	17.9	4.5	1.7	4.1	83
$5,000–9,999	2.3	30.1	41.7	14.8	6.4	4.7	127
$10,000 or more	1.7	8.4	20.8	24.1	20.9	24.1	201
Enrollment status							
Not enrolled	4.7	33.5	26.7	14.0	10.0	11.2	138
Enrolled full time	11.9	55.2	23.4	7.0	0.8	1.7	84
Enrolled part time	5.0	41.7	20.0	20.3	6.2	6.9	119
Degree-granting institution							
Public 4-year	6.5	38.9	25.7	13.5	7.7	7.8	121
Private, not-for-profit 4-year	2.4	26.2	26.0	15.9	12.9	16.6	163
Other	0.0	33.5	37.8	10.5	10.6	7.8	127

NOTE: Percentages may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1993 Baccalaureate and Beyond Longitudinal Study First Followup (B&B:93/94), Data Analysis System.

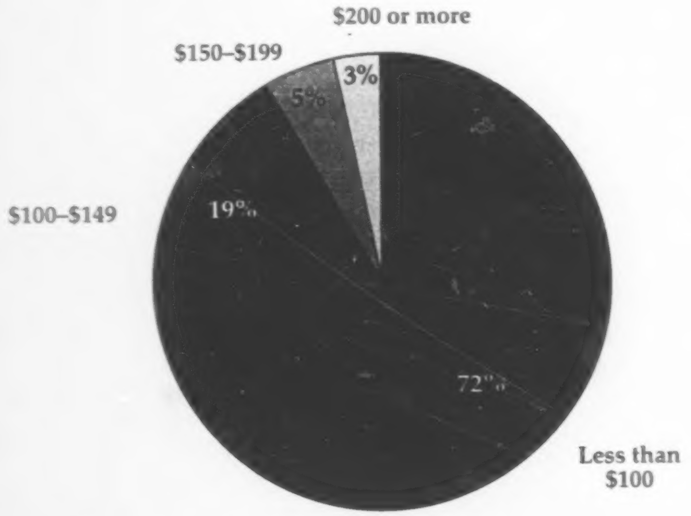
Figure 10—Percentage distribution of 1992–93 bachelor's degree recipients making payments on undergraduate loans according to amount of monthly payment in 1994



SOURCE: U.S. Department of Education, National Center for Education Statistics, 1993 Baccalaureate and Beyond Longitudinal First Followup (B&B:93/940), Data Analysis System.

For almost three-quarters of the noncompleters and associate's degree or certificate recipients, monthly payments on their student loans were less than $100 (table 32 and figure 11). Those with certificates were paying an average of $71, those with an associate's degree an average of $102, and those with no degree or certificate were paying an average of $73.

Figure 11—Percentage distribution of 1989–90 beginning postsecondary students whose enrollment ended by December 1992 and were making payments on student loans according to amount of monthly payment in spring 1994



SOURCE: U.S. Department of Education, National Center for Education Statistics, 1990 Beginning Postsecondary Students Longitudinal Study—Second Follow-up (BPS:90/94), Data Analysis System.

When comparing the average amounts being paid by bachelor's degree recipients and by noncompleters and associate's degree or certificate recipients and the relative percentages of each group paying $150 or more per month (figures 10 and 11), it appears that bachelor's degree recipients have much greater loan payments. In making such comparisons, it is important to remember that payment amounts for bachelor's degree recipients include payments on loans from all sources, while the payment amounts for the nonbaccalaureate group include only payments on loans made through student loan programs. However, a relatively small proportion of bachelor's degree recipients had loans from family or friends outstanding in 1994. This makes it reasonably safe to assume that payments on such loans make up a minor proportion of bachelor's

BEST COPY AVAILABLE

degree recipients' payments, and that they do indeed have much higher payments than the non-baccalaureate group.

Table 32—Percentage distribution of 1989–90 beginning postsecondary students whose last enrollment ended by December 1992 who were in repayment according to monthly student loan payments and average amount of payment, by selected student and institutional characteristics: 1994

	Less than $50	$50 to 100	$100 to 149	$150 to 199	$200 to 249	$250 or more	Average
Total	6.6	65.8	19.3	4.9	2.6	0.8	$76
Amount owed on student loans							
Less than $5,000	6.9	70.8	16.4	2.7	2.7	0.5	71
$5,000 to 9,999	3.7	49.8	34.0	8.5	1.3	2.7	100
$10,000 or more	—	—	—	—	—	—	—
Highest degree attained by December 1992							
None	8.7	67.2	16.6	4.6	2.4	0.6	73
Last attended 4-year	9.8	64.8	17.4	4.2	3.9	0.0	75
Last attended public 2-year	—	—	—	—	—	—	—
Last attended private, for-profit	6.9	67.2	20.5	2.8	2.6	0.0	72
Certificate	5.1	68.1	20.8	5.5	0.5	0.0	71
Associate's degree	4.1	55.1	24.3	4.6	8.5	3.4	102

—Sample size too small for a reliable estimate.

NOTE: Percentages may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1990 Beginning Postsecondary Students Longitudinal Study—Second Follow-up (BPS:90/94) Data Analysis System.

LOAN PAYMENTS AS A PERCENTAGE OF MONTHLY EARNINGS

As indicated above, understanding the extent to which education loan payments impose a financial burden on borrowers requires knowing something about the financial circumstances of the borrowers as well as the size of their payments. The most straightforward way to measure debt burden is to compute loan payments as a percentage of monthly income. In this analysis, salary data from B&B and earnings data from BPS are used as proxies for income. If borrowers have other sources of income, their debt burden will be overstated here. However, it seems unlikely that students who borrowed to finance their undergraduate education would have significant amounts of nonearned income only a few years after graduating or leaving school.

At what point does debt burden become excessive? No consensus has developed, largely because of the need to make subjective judgments about what percentage of their income new graduates should be expected to allocate to repaying their student loans. For example, should we be concerned that a borrower cannot afford buy a house or a new car as soon as a nonborrower? Nevertheless, several studies have suggested that debt burden beyond 10 to 15 percent may be excessive. One study conducted by Westat, Inc. recommends accepting 10 percent as a defensible threshold because mortgage lenders generally expect a family's non-housing debts not to exceed 10 percent.[25] Hansen and Rhodes suggest that manageable debt burden varies with income, and propose a range from 10 percent to 15 percent.[26] A recent analysis by Greiner starts with 12 percent, based on guidelines established by the Department of Housing and Urban Development in 1989 that state that total debt should not exceed 41 percent of income, and that mortgage payments should not exceed 29 percent.[27] That leaves 12 percent for automobile, credit card, and student loans. If one argues that graduates should not expect to buy a home or new car immediately after graduating, 12 percent for student loans appears defensible. Factoring in the results of a survey of borrowers' perceptions of debt burden causes Greiner to propose 8 percent as an appropriate alternative. Contributing to this debate is beyond the scope of this analysis, but knowing what others have proposed as excessive provides a context within which to view the debt burden of the groups studied in this analysis.

Bachelor's Degree Recipients

For about two-thirds of the bachelor's degree recipients in repayment in 1994 and employed full time, loan payments amounted to less than 10 percent of their April 1994 monthly salary. Thirty-one percent were paying less than 5 percent, and 38 percent were paying 5 to 9 percent (table 33 and figure 12). Sixteen percent were paying 15 percent or more, with the average at 9 percent.

Debt burden is related to salary and amount of debt. A low salary or high debt, or both, could cause an individual to have a high debt burden. Among the 1992–93 bachelor's degree recipients, the average percentage of monthly salary devoted to repaying loans decreased as salary increased, as one would expect. Graduates making less than $15,000 per year were devoting an average of 15 percent of their salary for loan payments, while those making $15,000 to 19,999

---

[25] U.S. Department of Education, Office of Policy and Planning, *Debt Burden Facing College Graduates*, by Westat, Inc. Washington, DC: 1992.

[26] W. Lee Hansen and Marilyn S. Rhodes, "Student Debt Crisis: Are Students Incurring Excessive Debt?"

[27] Keith Greiner, "How Much Student Loan Debt Is Too Much?"

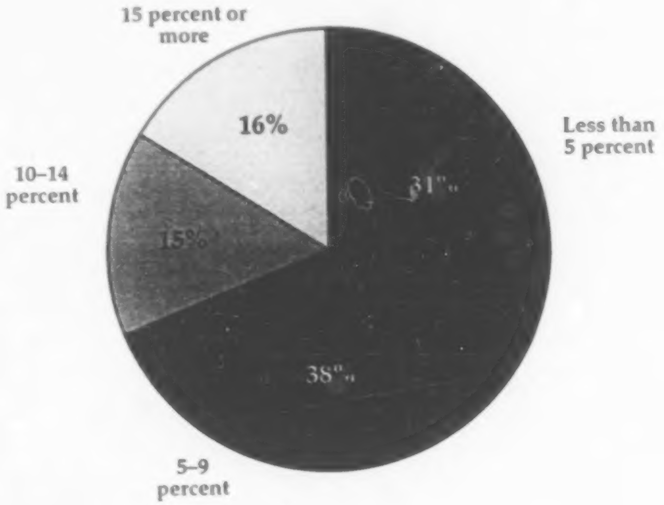
Table 33—Percentage distribution of 1992–93 bachelor's degree recipients making monthly education loan payments according to their monthly payment as a percent of their April 1994 salary, and average percent, by selected student and institutional characteristics: 1994

	Less then 5 percent	5–9 percent	10–14 percent	15 percent or more	Average
Total	30.9	38.0	15.4	15.7	8.8
Annual salary at April 1994 job					
Less than $15,000	7.8	29.3	21.5	41.4	14.6
$15,000–19,999	25.9	44.0	18.0	12.2	8.5
$20,000–24,999	32.8	42.5	15.9	8.9	7.4
$25,000–34,999	43.2	42.2	9.6	5.0	6.3
$35,000 or more	64.2	27.1	6.9	1.8	4.6
Total undergraduate debt still owed in 1994					
Less than $5,000	58.8	28.3	7.2	5.7	5.5
$5,000–9,999	22.1	49.8	15.7	12.4	8.6
$10,000 or more	8.8	37.8	23.8	29.6	12.6
Degree-granting insitution					
Public 4-year	35.9	38.3	13.1	12.7	7.9
Private, not-for-profit 4-year	23.5	34.2	19.8	22.5	10.4
Other	20.9	63.0	10.7	5.5	8.1
			Employed full time		
Total	33.5	39.1	15.3	12.1	8.0
Annual salary at April 1994 job					
Less than $15,000	9.3	31.8	24.3	34.7	13.3
$15,000–19,999	26.4	44.1	17.8	11.8	8.4
$20,000–24,999	33.2	43.1	16.0	7.7	7.2
$25,000–34,999	43.3	42.0	9.8	4.9	6.2
$35,000 or more	64.5	26.7	7.0	1.8	4.6
Total undergraduate debt still owed in 1994					
Less than $5,000	62.4	26.8	6.7	4.1	5.0
$5,000–9,999	24.7	52.0	14.8	8.5	7.9
$10,000 or more	9.8	40.7	25.3	24.2	11.5
Degree-granting institution					
Public 4-year	38.8	39.0	12.6	9.7	7.2
Private, not-for-profit 4-year	26.0	35.7	20.6	17.7	9.4
Other	18.8	66.8	11.4	2.9	8.1

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1993 Baccalaureate and Beyond Longitudinal Study First Followup (B&B:93/94), Data Analysis System.

per year were paying an average of 9 percent and those making $25,000 to $34,000 were paying 6 percent.

Figure 12—Percentage distribution of 1992–93 bachelor's degree recipients making education loan payments according to their monthly payment as a percent of their April 1994 income



SOURCE: U.S. Department of Education, National Center for Education Statistics, 1993 Baccalaureate and Beyond Longitudinal First Followup (B&B:93/940), Data Analysis System.

As the amount owed increased, so did the average monthly payment. Loan payments amounted to an average of 6 percent of their monthly salary for graduates who owed less than $5,000, 9 percent for those who owed $5,000 to $9,999, and 13 percent for those who owed $10,000 or more.

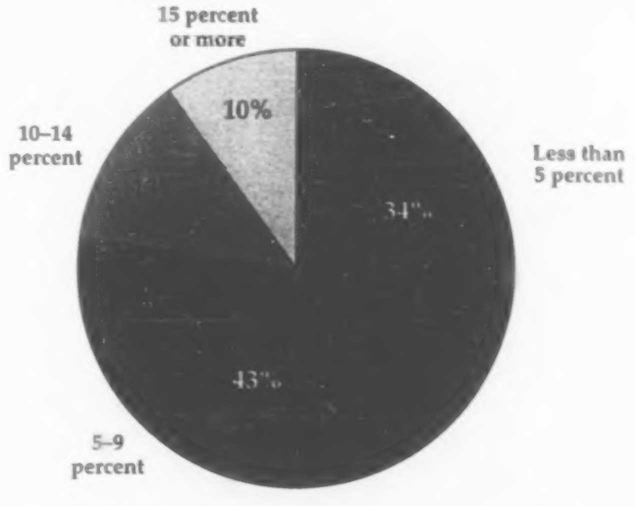
Graduates of private, not-for-profit institutions who were repaying loans were using an average of 10 percent of their monthly salary for this purpose, compared with 8 percent for graduates of public institutions. This difference reflects the greater average amount of borrowing among students at private, not-for-profit institutions, as graduates of private, not-for-profit institutions had slightly higher average salaries, on average, than graduates of public institutions (table 13).

In summary, then, large debt burdens appear to be a problem particularly for those with very low salaries (less than $15,000) or high loan amounts (more than $10,000). For example, 41 percent of the former group and 30 percent of the latter had debt burdens of 15 percent or more, much greater proportions than found among those with higher incomes or lower levels of debt. Because students who attend private, not-for-profit institutions tend to borrow more than those who attend public institutions, the former were more likely to have debt burdens of 10 percent or more.

Noncompleters and Associate's Degree or Certificate Recipients

The nonbaccalaureate group was less burdened with debt than the bachelor's degree recipients. About three-quarters of the nonbaccalaureate group were using less than 10 percent of their monthly earned income to repay their student loans (table 34 and figure 13). The average was 8 percent. Small sample sizes preclude making statistically reliable comparisons among subgroups.

Figure 13—Percentage distribution of 1989–90 beginning postsecondary students whose enrollment ended by December 1992 and were making payments on student loans according to their monthly student loan payment as a percent of monthly earnings



SOURCE: U.S. Department of Education, National Center for Education Statistics, 1990 Beginning Postsecondary Students Longitudinal Study—Second Follow-up (BPS:90/94), Data Analysis System.

Table 34—Percentage distribution of 1989–90 beginning postsecondary students whose last enrollment ended by December 1992 making payments on student loans according to their monthly payment as a percentage of estimated monthly earnings and average burden, by selected student and institutional characteristics: 1994

	Less than 5 percent	5 to 9 percent	10 to 14 percent	15 percent or more	Average
Total	34.1	43.0	13.0	9.9	7.8
Amount owed on student loans					
Less than $5,000	38.3	42.2	11.5	8.0	7.3
$5,000 to 9,999	14.4	59.5	13.0	13.1	9.2
$10,000 or more	—	—	—	—	—
Highest degree attained by December 1992					
None	33.1	38.3	16.5	12.0	8.2
Last attended 4-year	31.6	38.8	14.8	14.8	8.6
Last attended public 2-year	—	—	—	—	—
Last attended private, for-profit	37.8	37.7	7.5	17.0	9.0
Certificate	36.1	49.7	9.4	4.8	6.8
Associate's degree	31.8	40.4	11.2	16.7	9.4

—Sample size too small for a reliable estimate.

NOTE: Percentages may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1990 Beginning Postsecondary Students Longitudinal Study—Second Follow-up (BPS:90/94) Data Analysis System.

Because the data for this group do not include monthly earned income for spring 1994 (the time for which payment information applies), monthly income was calculated by dividing the reported 1993 annual earned income by 12. This assumes that the nonbaccalaureate group's monthly earned income in spring 1994 was the same as their average monthly earnings in 1993. While not ideal, this is the best measure available.

OTHER INDICATORS OF DEBT BURDEN FOR BACHELOR'S DEGREE RECIPIENTS

While the ratio of loan payments to monthly earnings is probably the most important indicator of debt burden, it is not the only one. Aspects of a borrower's financial circumstances other than earnings can also affect the financial burden of the payments. For example, a borrower who had a nonworking spouse who also had student loan debt would probably find paying 9 percent of his or her monthly earnings in loan payments much more of a burden than would a borrower who had a working spouse with no loan debt. This section looks at two other indicators of debt burden for bachelor's degree recipients: monthly payments for other expenses and spouses' debt burdens. No comparable information is available for the nonbaccalaureate group.

Monthly Payments for Other Expenses

While complete details of the 1992–93 bachelor's degree recipients' financial situations are not available, data were collected on how much graduates were paying per month for some major expenses: mortgages, rent, auto loans, and other noneducational debt (credit cards, for example). The average for these was about $650 per month (table 35).

As one might expect, graduates with higher monthly salaries had higher monthly expenditures for these items. In addition, as loan payments used up an increasing proportion of graduates' monthly salary, payments for these expenses generally decreased. However, the total amount owed for undergraduate debt and monthly expenses did not appear to be related. Monthly expenses for the items listed above were similar for borrowers and nonborrowers and did not increase with the total owed. In other words, while higher present loan payments (as a percent of monthly income) may hamper current spending on other items, the existence of outstanding loans does not seem to. Those who had borrowed but no longer owed (that is, who either repaid their loans by 1994 or had them canceled) had higher expenses than those who had never borrowed at all.

Spouses' Borrowing for Education

The burden of a graduate's loan payments may be compounded if the graduate has a spouse with outstanding loans as well, depending on the spouse's income. However, relatively few bachelor's degree recipients were in this position. About 9 percent of 1992–93 bachelor's degree recipients who owed money in 1994 had a spouse who also owed money for his or her education). The average amount owed by spouses with education debt was about $8,300, similar to the average $9,000 owed by the 1992–93 bachelor's degree recipients (table 20).[28]

---

[28] Data on spouses' borrowing from U. S. Department of Education, National Center for Education Statistics, 1990 Beginning Postsecondary Students Longitudinal Study—Second Follow-up, (BPS:90/94), Data Analysis System.

Table 35—Percentage distribution of 1992–93 bachelor's degree recipients according to monthly payments for selected noneducational expenses (mortgage, rent, auto loans, and other debt), and average amount paid, by selected student characteristics: 1994

	Noneducational expenses					
	None	Less than $250	$250 to 499	$500 to 999	$1,000 or more	Average
Total	8.5	10.5	27.1	38.0	15.9	$653
Annual salary at April 1994 job						
Less than $15,000	16.4	18.4	33.3	26.3	5.7	476
$15,000–19,999	7.8	12.3	30.4	38.9	10.5	586
$20,000–24,999	4.8	7.3	27.9	45.2	14.8	663
$25,000–34,999	4.2	5.3	23.2	43.9	23.4	749
$35,000 or more	4.7	3.0	10.7	41.9	39.7	965
Borrowing for undergraduate education						
Did not borrow	11.0	10.4	27.2	35.9	15.4	645
Borrowed	5.6	10.8	27.0	40.2	16.5	660
Total undergraduate debt still owed in 1994[1]						
None	7.0	7.8	25.0	37.1	23.1	732
Less than $5,000	5.3	10.2	26.4	43.1	15.0	644
$5,000–9,999	6.2	11.6	26.4	38.4	17.4	674
$10,000 or more	4.6	12.1	29.7	40.2	13.5	623
Monthly education loan payment as percent of monthly income[2]						
Less than 5 percent	2.3	6.1	20.5	46.0	25.2	766
5–9 percent	2.3	9.0	27.6	45.1	16.1	685
10–14 percent	6.5	16.2	28.1	38.8	10.4	570
15 percent or more	11.0	16.8	33.1	32.0	7.2	517

[1] Includes only those who borrowed.

[2] Includes only those making payments.

NOTE: Percentages may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1993 Baccalaureate and Beyond Longitudinal Study First Followup (B&B:93/94), Data Analysis System.

BORROWING AND LIFESTYLE CHOICES

Also of interest to policymakers is understanding how students' borrowing to finance their undergraduate education may later influence their lifestyle. Borrowing might affect decisions about marrying and living at home, and might also affect the ability to save money for purposes such as a house or further education.

Marriage

Marrying in the first year after graduation was not related to the existence of outstanding loans. Overall, 7 percent of all 1992–93 bachelor's degree recipients married between the time they graduated and 1994, with the percentages similar for borrowers and nonborrowers (table 36). Those with the highest monthly education loan payment to salary ratio were just as likely as those with lower ratios to marry between graduation and 1994.

Table 36—Percentage distribution of 1992–93 bachelor's degree recipients according to marital status in April 1994 and percentage who married between 1993 and 1994

	Marital status in April 1994		
	Married, cohabit as married	Never married, divorced, separated, or widowed	Married between 1993 and 1994
Total	30.3	69.7	7.3
Annual salary at April 1994 job			
Less than $15,000	25.0	75.0	7.4
$15,000–19,999	24.8	75.2	7.0
$20,000–24,999	28.9	71.1	7.7
$25,000–34,999	33.1	66.9	8.0
$35,000 or more	50.4	49.6	5.4
Borrowing for undergraduate education			
Did not borrow	28.7	71.3	7.0
Borrowed	32.0	68.0	7.6
Total undergraduate debt still owed in 1994[1]			
None	36.8	63.2	7.0
Less than $5,000	32.1	67.9	9.6
$5,000–9,999	30.9	69.1	7.8
$10,000 or more	30.3	69.7	6.9
Monthly education loan payment as percent of monthly income[2]			
Less than 5 percent	36.5	63.5	8.2
5–9 percent	33.7	66.4	8.3
10–14 percent	31.0	69.0	8.7
15 percent or more	25.6	74.4	9.1

[1] Includes only those who borrowed.

[2] Includes only those making payments.

NOTE: Percentages may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1993 Baccalaureate and Beyond Longitudinal Study First Followup (B&B:93/94), Data Analysis System.

Living Arrangements

About one-quarter (27 percent) of 1992–93 bachelor's degree recipients were living with parents or relatives in April 1994 (table 37). The likelihood of doing so was related to age, salary, and debt burden. Younger and lower income graduates were more likely to be living with parents or relatives. One-third of those who were 24 years or less when they received their bachelor's degree were living with parents or relatives in April 1994, compared with 20 percent of those 25 to 29 years old and 3 percent of those 30 years or older. One-third of those with salaries less than $20,000 were living with parents or relatives, a considerably greater proportion than among those making $25,000 or more. In addition, those with monthly education loan payments amounting to 15 percent or more of their monthly salary were more likely than those with payments amounting to less than 5 percent of their monthly salary to be living with parents or relatives (35 percent compared with 22 percent).

Table 37 also shows the living arrangements of graduates who were 24 years or less when they received their bachelor's degree. Among those in this age group whose education loan payments amounted to 15 percent or more of their April 1994 salary, 40 percent were living with parents or relatives.

Saving

About three-quarters of all 1992–93 bachelor's degree recipients who were working full time in April 1994 were saving money: 30 percent were saving to buy a home, 21 percent for further education, 24 percent for retirement, 13 percent to buy a vehicle, and 34 percent for a "rainy day" (table 38). Those earning $35,000 or more were more likely to be saving than those earning less than $15,000.

Debt burden and the likelihood of saving were generally unrelated. Among bachelor's degree recipients making loan payments, between 71 and 77 percent of those working full time were saving, regardless of the percentage of their monthly salary devoted to education loan payments. Those paying 15 percent or more of their salary for education loan payments were more likely than those paying less than 5 percent to be saving for further education (28 percent compared with 16 percent). The amount saved may have been related to debt burden, but B&B participants were not asked about the amounts they saved.

Table 37—Percentage distribution of 1992–93 bachelor's degree recipients according to where they were living in April 1994, by selected student characteristics

	Own house or apartment	With parents or relatives	Other
Total	69.9	26.6	3.5
Age received bachelor's degree			
24 or younger	63.3	32.9	3.8
25–29	77.2	20.0	2.8
30 or older	94.4	3.2	2.4
Annual salary at April 1994 job			
Less than $15,000	60.4	33.4	6.3
$15,000–19,999	64.4	32.8	2.9
$20,000–24,999	71.0	26.3	2.7
$25,000–34,999	77.6	20.2	2.2
$35,000 or more	87.5	11.2	1.3
Total undergraduate debt still owed in 1994[1]			
None	76.8	20.3	2.9
Less than $5,000	69.3	26.8	3.9
$5,000–9,999	67.4	28.9	3.7
$10,000 or more	72.3	23.1	4.6
Monthly education loan payment as percent of monthly income[2]			
Less than 5 percent	76.0	22.3	1.6
5–9 percent	71.4	26.0	2.6
10–14 percent	68.9	29.0	2.1
15 percent or more	57.4	34.7	7.9
Received bachelor's degree at age 24 years or less			
Total	63.3	32.9	3.8
Annual salary at April 1994 job			
Less than $15,000	56.4	36.6	7.0
$15,000–19,999	58.7	38.7	2.6
$20,000–24,999	65.8	31.6	2.6
$25,000–34,999	71.5	26.6	1.9
$35,000 or more	79.0	19.1	1.9
Total undergraduate debt still owed in 1994[1]			
None	67.0	29.8	3.2
Less than $5,000	62.7	33.1	4.1
$5,000–9,999	58.8	37.2	4.0
$10,000 or more	65.5	29.4	5.1

Table 37—Percentage distribution of 1992–93 bachelor's degree recipients according to where they were living in April 1994, by selected student characteristics—Continued

	Own house or apartment	With parents or relatives	Other
Monthly education loan payment as percent of monthly income[2]			
Less than 5 percent	68.8	29.5	1.8
5–9 percent	64.8	33.1	2.1
10–14 percent	60.6	36.7	2.7
15 percent or more	50.9	40.3	8.9

[1] Includes only those who borrowed.

[2] Includes only those making payments.

NOTE: Percentages may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1993 Baccalaureate and Beyond Longitudinal Study First Followup (B&B:93/94), Data Analysis System.

Table 38—Percentage of 1992–93 bachelor's degree recipients working full time in April 1994 who were saving money and the percentage saving for various reasons, by selected student characteristics: 1994

	Any reason	Buy a home	Further education	Retire-ment	Buy a vehicle	Rainy day
Total	75.3	29.5	20.8	24.2	13.0	34.1
Annual salary at April 1994 job						
Less than $15,000	68.6	21.0	25.3	9.9	14.1	32.4
$15,000–19,999	74.6	23.3	26.9	14.6	16.7	33.3
$20,000–24,999	72.6	31.6	19.4	21.6	13.3	37.0
$25,000–34,999	77.7	38.5	18.2	32.1	9.8	34.1
$35,000 or more	86.5	29.7	13.7	43.9	11.5	33.1
Borrowing for undergraduate education						
Did not borrow	77.2	30.0	21.7	25.4	13.3	34.9
Borrowed	73.5	29.0	19.9	23.1	12.5	33.5
Total undergraduate debt still owed in 1994[1]						
None	79.1	32.5	17.0	32.1	13.1	32.7
Less than $5,000	74.4	30.5	21.2	23.6	13.5	34.2
$5,000–9,999	72.8	29.3	20.0	21.3	11.0	31.7
$10,000 or more	69.9	25.7	20.9	19.1	12.4	32.9
Monthly education loan payment as percent of monthly income[2]						
Less than 5 percent	76.7	31.2	16.0	26.5	10.7	34.9
5–9 percent	74.3	30.6	21.7	21.8	11.5	31.1
10–14 percent	71.1	25.3	19.4	16.5	15.1	32.2
15 percent or more	70.9	24.1	27.9	17.0	11.5	31.8

[1] Includes only those who borrowed.

[2] Includes only those making payments.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1993 Baccalaureate and Beyond Longitudinal Study First Followup (B&B:93/94), Data Analysis System.

SUMMARY AND CONCLUSION

For two groups—1992–93 bachelor's degree recipients and 1989–90 beginning postsecondary students whose last enrollment ended by December 1992—this analysis has examined early labor force participation, borrowing, and the financial and other implications of this borrowing after graduating or leaving postsecondary education. This section summarizes the major findings for each group.

1992–93 BACHELOR'S DEGREE RECIPIENTS

In 1994, approximately one year after they graduated, the vast majority (87 percent) of the 1992–93 bachelor's degree recipients were employed, even if they were continuing their education. About three-quarters (76 percent) were working only, and 11 percent were combining work and further education. The most common method of finding out about their job was a referral from family, friends, or professors. Those working full time had an average annualized salary of about $24,200 from their primary April 1994 job. Some undergraduate majors seem to lead to better paying jobs than others. Specifically, graduates who majored in business and management, engineering, mathematics, or science had considerably higher salaries than those who majored in humanities or social sciences.

The April 1994 unemployment rate for 1992–93 bachelor's degree recipients was 4.5 percent. Some experience with unemployment in the first year after graduating was not uncommon: 29 percent had been unemployed and looking for work for at least one month. Although older undergraduates (30 years or older) as a group were less likely than younger ones (24 years or younger) to ever be unemployed, they were more likely to have been unemployed for 9 months or more.

About one-half (49 percent) of the 1992–93 bachelor's degree recipients had borrowed from some source (including relatives or friends as well as through student loan programs) to help finance their education. The average total amount borrowed from all sources was $10,200. Graduates of private, not-for-profit institutions were more likely to have borrowed and to have borrowed more, on average, than graduates of public institutions. The B&B data provide no evidence that graduates' career choices were related to borrowing if they were working. However, borrowers were less likely to enroll immediately in graduate school or other postsecondary education, even when other student and institutional characteristics were taken into account.

In 1994, 29 percent of all 1992–93 bachelor's degree recipients were required to make payments on their education loans. For those making payments, the average monthly payment was $136, or about 9 percent of their April 1994 monthly salary. The graduates with the greatest average debt burden (15 percent) were those with salaries less than $15,000.

As monthly debt burden increased, graduates reported spending less on other items, such as housing, auto loans, and other noneducational debt, but larger outstanding loans did not appear to limit spending on these items. Marrying did not appear to be related to debt burden, but graduates whose debt burden exceeded 15 percent were more likely than those with lower debt burdens to be living with parents or relatives. Whether or not a graduate was saving did not seem to be related to debt burden, but whether or not it affected the amount saved is unknown.

1989–90 BEGINNING POSTSECONDARY STUDENTS WHOSE LAST ENROLLMENT ENDED BY DECEMBER 1992

As with the bachelor's degree recipients, the vast majority of this group (81 percent) were employed in April 1994. Characteristics associated with higher employment rates were being male, first enrolling in postsecondary education at age 19 or younger, being in the highest SES quartile in 1989–90, having last attended at public or private, not-for-profit (rather than private, for-profit) institution, and having attended a 2-year public (rather than less-than-2-year) institution.

The average 1993 earned income for this group overall was $16,600. However, there were differences by gender, race–ethnicity, occupation, and type of institution attended, all of which are interrelated.

The April 1994 unemployment rate for this nonbaccalaureate group—4.7 percent was similar to that of the bachelor's degree recipients. About three-quarters of the beginning postsecondary students who left postsecondary education or attained an associate's degree or certificate by December 1992 found their jobs within a month. Those who attended a private, for-profit institution were less likely than those who attended 4-year or public 2-year institutions to find their job within a month.

Overall, 43 percent of the nonbaccalaureate group borrowed from some source, and 25 percent borrowed through student loan programs. The average amount borrowed ranged from $2,900 at public 2-year institutions to $6,200 at private, not-for-profit institutions. Those who left postsecondary education without a degree or certificate were the least likely to have borrowed through a student loan program. Borrowers were more likely than nonborrowers to report that job security and permanence were very important factors in determining the type of work they planned to do for most of their lives.

In spring 1994, 16 percent of the noncompleters and associate's degree or certificate recipients were repaying student loans. For three-quarters of those repaying loans, their debt burden was less than 10 percent; the overall average was 8 percent.

APPENDIX A—GLOSSARY

This glossary describes the variables used in this report. The variables were taken directly from the NCES B&B:93/94 and BPS:90/94 Data Analysis Systems (DAS). The DAS is an NCES software application that generates tables from the B&B or BPS data. Appendix B contains a description of the DAS software. The glossary is divided into two parts: Part I describes the B&B data, and Part II describes the BPS data. Within each section, the entries are organized alphabetically according to the label used in the tables. The DAS variable names are indicated to the right of each label.

Index for B&B Variables

Accepted to graduate school 91
Age received bachelor's degree 91
Amount borrowed 91
Annual salary at April 1994 job 91
Any unemployment spells 91
Applied to graduate school 91
April 1994 occupation 91
Baccalaureate degree major 93
Considered attending graduate school 94
Date received bachelor's degree 95
Degree-granting institution 95
Employment status in April 1994 95
Employment/enrollment status April 1994 95
Enrollment status April 1994 96
First postsecondary institution 96
Gender 96
GPA (4.0 scale) 96
How found April 1994 job 96
Income and dependency level 97
Job characteristics important in determining future work 97
Marital status in April 1994 97
Married between 1993 and 1994 97
Monthly education loan payment as percent of monthly income 97
Monthly education loan payments 98
Monthly loan payment status 98
Months of graduate study 98
Noneducational expenses 98
Number of months unemployed 98
Number of schools accepted 98
Primary reason for not applying to graduate school 98
Race–ethnicity 99
Reason for saving money 99
Reason for taking April 1994 job 100
Relationship between April job and degree 100
Respondent applied to graduate school 100
Saving money 100
Time from postsecondary entry to bachelor's degree 100
Total undergraduate debt still owed in 1994 100
Where living April 1994 100

Index for BPS Variables

Academic year last enrolled 101
Age when began postsecondary education 101
Amount owed on student loans 101
Average duration of unemployment spells (months) 101
Average monthly loan payment 101
Borrowed for education 101
Control of last institution 101
Debt status in 1994 102
Degree working toward in 1989–90 102
Earned income in 1993 102
Educational debt burden 102
Employment and enrollment status in April 1994 102
End date of last enrollment spell 102
Ever unemployed 1989–94 103
Gender 103
Highest degree attained by spring 1994 103
Importance of job security and permanence 103

Level and control of last institution 103
Level of last institution 103
Major during last enrollment spell 104
Months after leaving PSE before obtained first principal job 104
Primary occupation in 1993 104
Race–ethnicity 104
Receiving help with payments 104
Repayment status in 1994 105
Socioeconomic status (SES) 105
Student loan amount 105
Student loans 105
Total months unemployed 105
Unemployed April 1994 105

PART I: B&B VARIABLES

Accepted to graduate school **ACCEPT**

ACCEPT indicates respondents who applied to graduate school and reported the number to which they were accepted.

Age received bachelor's degree **AGEATBA**

AGEATBA indicates the respondent's age when he or she received his or her bachelor's degree at the NPSAS institution (the institution the respondent was attending when selected for inclusion in NPSAS).

Amount borrowed **TOTDEBT**

Respondents were asked to confirm the total amount they reported having borrowed in the 1992–93 NPSAS survey. If they had not provided the information then, they were asked to provide it in this survey. The amount includes federal, state, and institutional loans, and loans from family, friends, relatives, banks, savings and loans, and credit unions. It also includes repaid loans.

The variable was also used to distinguish between those who ever borrowed for their undergraduate education and those who had not. In these instances the variable was labeled "Borrowing for undergraduate education," with two categories: did not borrow; and borrowed.

This variable was also used to compute average amounts borrowed.

Annual salary at April 1994 job **APRANSAL**

This variable was constructed by annualizing the wages/salary reported by respondents for their primary April 1994 job. APRANSAL was computed by multiplying the sum of the wages reported per pay period by the number of pay periods within a year. If the respondent had more than one job, the primary job was the one with the most hours worked; if the number of hours was equal, the job with the highest salary was selected.

The variable was also used to compute average salaries. When this variable was used in table columns, the table included only those whose annual salary was at least $1,000 and less than or equal to $500,000.

Any unemployment spells **UNEMPLSP**

Positive values on this variable identify respondents with any unemployment spells since graduation. A spell was defined as one or more contiguous months of unemployment since college graduation. The variable was created using the monthly employment indicators. If respondent was unemployed during the month, an unemployment spell was constructed. Note, this does not include those who were not in the labor force.

Applied to graduate school **EVERAPP**

EVERAPP indicates if respondent ever applied to graduate school.

April 1994 occupation **AJOBOCC**

Occupation code for respondents' primary April job. See the entry for "Annual salary at April 1994 job" for the definition of "primary job." The occupation was coded during the interview with an on-line coding program developed by NCES. This report aggregated the coded occupations as follows (the numbers in parentheses are the codes from the on-line coding program):

Business and management
- Manager/administrator, sales/purchasing (8)
  - Includes sales managers, buyers, advertising agents, insurance brokers, and underwriters.
- Manager/administrator, government (9)
  - Includes local, state, and federal government managers, supervisors, administrators, treasurers, assessors, controllers, inspectors, and school administrators and principals.
- Manager/administrator, retail/hospitality (10)
  - Stores, hotels, restaurants, bars, or other retail establishments.
- Manager/administrator, manufacturing/construction (11)
  - Quality control and line supervisors.
- Manager/administrator, other (12)
- Proprietor/owner, retail/hospitality (21)
- Proprietor/owner, manufacturing/construction (22)
- Proprietor/owner, other (23)

School teacher
- Elementary/secondary school teacher (26)
  - Includes substitute and pre-school teachers.

Professional
- Arts and entertainment occupations (15)
  - Includes actors, artists, writers, athletes, dancers, designers, editors, reporters, musicians, composers, photographers, public relations, radio/television announcers, and other entertainers.
- Medical, nonphysician (16)
  - Includes registered nurses, therapists, pharmacists, dietitians, and clinical psychologists.
- Engineer (17)
  - Includes mechanical, electrical, agricultural, aeronautical, chemical, mining, materials, and petroleum.
- Physician (18)
  - Includes physicians, dentists, veterinarians, optometrists, chiropractors, and podiatrists.
- Legal professions (lawyer, judge) (19)
- All other professions (20)
  - Includes clergy, social workers, professors, scientists, architects, librarians, and accountants.

Administrative, clerical, support
- Secretarial (01)
  - Includes typists, receptionists, computer/machine operators, payroll/time-keepers, shipping/receiving clerks, and stenographers.
- Financial clerical (02)
  - Includes bookkeepers, bank tellers, billing clerks, cashiers, bill collectors, real estate appraisers, and insurance adjusters.
- Other clerical (03)
  - Includes ticket/travel agents, mail carriers/handlers, postal clerks, messengers, meter readers, enumerators, interviewers, dispatchers, library assistants, teacher aides, and stock clerks.

Sales, service
- Sales (25)
  - Includes all sales positions, advertisers, auctioneers, insurance agents, real estate agents, and brokers.

Service (27)
Includes domestics, barbers, janitors, waiters/waitresses, attendants, nursing aides, baggage porters, bellhops, orderlies, house-keepers, hairdressers, paper carriers, child care workers, launderers, bootblacks, and lifeguards.

Other
Crafts, precision production/repair (04)
Includes bakers, mechanics, painters, carpenters, jewelers, machinists, repairers, excavators, inspectors, electricians, millers, sign painters, tailors, telephone lineworkers, upholsterers, opticians, plasterers, paper hangers, and plumbers.
Agriculture, fishing (05)
Includes farmers, horticulturists, gardeners/groundskeepers, trappers, foremen, and fish farmers.
Homemaker (06)
Laborer (07)
Includes apprentices, construction workers, sanitation workers, longshoremen, stevedores, teamsters, vehicle washers, miscellaneous laborers, freight/material handlers, and carpenter's helpers.
Military personnel (13)
Skilled operative, machinery/equipment (14)
Includes assemblers, drivers, machine operators, cutters, graders, meat cutters, sailors, fire fighters, welders, textile carders/loopers/knitters, stitchers/sewers, riveters, punchers, mine operatives, and bottlers.
Protective services (24)
Computer science, programming (28)
Includes computer technicians, systems analysts/specialists, and computer engineering assistants.
Noncomputer technician (29)
Includes drafters, medical/dental technicians, hygienists, pilots, radiology technicians, clinical lab technicians, and engineering assistants.
Uncodeable (0)

Baccalaureate degree major **BAMAJOR**

A respondent's undergraduate major field of study was coded during the interview with an on-line program developed by NCES. In this report major fields were collapsed into categories equivalent to the Recent College Graduate Surveys for comparison purposes (numbers in parentheses are codes from the on-line program). If respondents reported more than one major, this variable represents the first one mentioned.

Business and management
Accounting (10)
Business fields (11–16)
Includes finance, business/management systems, business/management administration, business support, and marketing/distribution.

Engineering, math, or science
Engineering
Includes electrical (31), chemical (32), civil (33), mechanical (34), engineering technology (36), and all others (35).
Biological sciences
Includes zoology (66), botany (67), biochemistry (68), biophysics (69), and all others (70).
Mathematics and other sciences
Mathematics (71–72)
Includes statistics and other mathematics (not statistics).

- Computer sciences (20–22)
  - Includes computer programming, data processing technology, and computer and information sciences.
- Physical sciences (84–87)
  - Includes chemistry, earth sciences, physics, and all others (not chemistry/physics/earth science).

- Humanities or social science
  - Social science
    - Anthropology/archaeology (92)
    - Economics (93)
    - Geography (94)
    - Sociology (96)
    - Political science (97)
    - International relations (98)
  - History (95)
  - Humanities
    - Foreign languages (37–39)
      - Includes non-European and European/general.
    - Letters (61–63)
      - Includes English/American literature, creative/technical writing, and all others.
    - Philosophy/theology (81–83)
    - Design (108)
    - Speech/drama (109)
    - Film arts (110)
    - Music (111)
    - Art history/fine arts (112)
    - Fine and performing arts (all others) (113)
  - Psychology (88)

- Other
  - Education
    - Includes early childhood (25), elementary (26), secondary (27), special (28), physical education (29), and all others (30).
  - Health professions
    - Allied Health (40–41)
      - Includes dental/medical technician, community/mental health, nurse assisting, and all others.
    - Health/Physical Education/Recreation (42)
    - Health (45–54)
      - Includes audiology, clinical health science, dentistry, medicine, veterinary medicine, nursing, health/hospital administration, public health, dietetics, and all others.
  - Public affairs/social services
    - Protective services (89)
    - Social work (90)
    - Public administration (not social work) (91)
  - Other (all others)

Considered attending graduate school **WANTAPP**

Indicates whether or not a respondent ever considered attending graduate or professional school (yes/no). It was asked only of respondents who had not applied to graduate school.

Date received bachelor's degree **DATRCVBA**

Respondents provided the date they received their bachelor's degree. Three time periods were used in this report: July 1992 to September 1992; October 1992 to January 1993; and February 1993 to June 1993.

Degree-granting institution **SECTOR_B**

SECTOR_B refers to the type of institution that granted the bachelor's degree to respondent. Institutions were categorized by level, control, and, for 4-year institutions, whether or not they granted PhDs. See the entry for "First postsecondary institution" for more detail on types of institutions. Three categories of degree-granting institutions were distinguished in this report:

Public 4-year	PhD granting and non-PhD granting.
Private, not-for-profit, 4-year	PhD granting and non-PhD granting.
Other	Public less-than-2-year; public 2-year; private not-for-profit, less-than-4-year; private for-profit less-than-2-year; and private for-profit, 2-years-or-more.

Employment status April 1994 **EMPLOY22**

Indicates employment status in April 1994. Respondents were asked about their job history since graduation, including the number of jobs they had held, the beginning and ending dates of the jobs, whether they were employed full or part time in each job, if they had been looking for work (and if so, if they had received unemployment benefits), and if they were not working, the reason. Based on the job history information, monthly indicators were constructed characterizing the monthly employment status of each respondent as: employed full time; employed part-time; unemployed with benefits; unemployed without benefits; and out of the labor force.

A job was considered full-time if the respondent reported working 35 or more hours per week. For respondents with multiple jobs, the respondent was considered employed full time if any job they held that month was a full-time job. If they worked at two or more part-time jobs, they were considered part time even if their hours totaled 35 or more per week.

Respondents who were not working but looking for work were considered unemployed. For this report, the unemployment categories (with and without benefits) were combined because almost no respondents were receiving unemployment benefits. Respondents categorized as out of the labor force were those who were not available for work and not looking for work.

Employment/enrollment status April 1994 **ENREMP22**

Indicates enrollment status in April 1994. Indicates the respondent's enrollment and employment status in April 1994. ENREMP22 distinguishes between full- and part-time enrollment. For this report, four categories were used: enrolled (full or part time) and employed; enrolled (full or part time) and not employed; employed and not enrolled; neither employed nor enrolled.

BEST COPY AVAILABLE

Enrollment status April 1994 **ENROL22**

Indicates enrollment status in April 1994. Respondents were asked about enrollment in any education after receiving their bachelor's degree and the dates of enrollment. Based on these dates, monthly enrollment indicators were constructed with the following values: not enrolled; enrolled full time; and enrolled part time.

First postsecondary institution **FSCTYPE1**

This variable indicates the type of institution the respondent first attended. It was created by looking for the first postsecondary enrollment after high school that lasted three months or longer. Institutions attended before high school graduation were eligible if enrollment continued after high school graduation. The first institution may or may not be the institution that awarded the bachelor's degree.

Public 4-year	A publicly controlled institution operated by publicly elected or appointed officials who control the institution's programs and activities, and that grants bachelor's degrees, including doctorate and nondoctorate-granting institutions.
Private, not-for-profit (independent) 4-year	An institution controlled by an independent governing board and incorporated under section 501(c)(3) of the Internal Revenue Code and that grants bachelor's degrees, including doctorate and nondoctorate-granting institutions.
Public 2-year	A public institution, primarily community colleges, with programs at least 2 years in length awarding certificates and associate's degree but not bachelor's degrees.
Other	For this report includes private, not-for-profit less-than-4 year; public less-than-2-year; and private, for-profit institutions. Private-for-profit institutions are postsecondary educational institutions that are privately owned and operated as profit making enterprises. These institutions include career colleges and proprietary institutions.

Gender **RSEX**

B&B:93/94 respondents were asked their gender only if this information was missing from NPSAS and not obvious during the interview. Respondents were categorized as male or female

GPA (4.0 scale) **NORMGPA**

NORMGPA is the normalized grade point average fit to a 4.0 scale, based on student transcripts. Respondents were categorized into two groups: GPA was less than 3.0; and GPA was 3.0 or above.

How found April 1994 job **AJBOBT_**

Respondents were asked how they found out about their April 1994 job. They could report more than one method. A yes or no response was recorded for each of 14 methods. This report includes the methods reported by more than 5 percent of the respondents.

Referred by family, friends, professors	**AJBOBT01**
Want ad	**AJBOBT02**
Campus placement office	**AJBOBT03**
Explored possible job opportunities through interview	**AJBOBT04**
Employment agency	**AJBOBT05**
Advancement in company where previous employed	**AJBOBT06**

Income and dependency level **INCOME**

The source of income for dependent students is their parents or guardians; the source of income for independent students is their own assets or earnings including those of their spouse if they are married. Incomes refer to 1991 income and were derived from three sources: institutional records, parental reports, and student reports (in priority order).

Job characteristics important in determining future work **CHOICE__**

Respondents were asked what factors were important to them in determining the type of work they planned to do in the future. A yes or no response was recorded for each of 14 factors. This report included factors that had "yes" responses from at least 30 percent of the respondents.

Good starting income	**CHOICE02**
Good income potential	**CHOICE03**
Job security	**CHOICE04**
Interesting work	**CHOICE06**
Intellectually challenging work	**CHOICE07**
Interaction with people	**CHOICE09**

Marital status in April 1994 **MARSTAT**

This variable was created using the marital status from NPSAS:93 and reported changes to determine respondent's marital status in April 1994. Categories included: married; divorced; separated; widowed; never been married; or living together in marriage-like relationship. These were grouped into two categories for this report: married or cohabit as married; and never married, divorced, separated, or widowed.

Married between 1993 and 1994 **MARICH01**

This variable registers any change in marital status between 1993 and 1994. The percentage who said they went from being divorced, separated, widowed, never married, or living together in a marriage-like relationship to being married is identified in the table.

Monthly education loan payment as percent of monthly income **EDPCT**

Monthly education loan payments divided by monthly income. See entry for "Monthly education loan payments." Monthly income (MOINC) was calculated by dividing the April 1994 annual salary by 12.

EDPCT was also used to calculate average ratio of loan payments to monthly income. When this variable was used in a table or a figure, the table or figure included only respondents with a value of 50 percent or less on EDPCT.

Monthly education loan payments **ALLOWE**

Respondents who were repaying education loans reported the total amount they paid each month. This variable was also used as an average. When this variable was used in a table or figure, the table or figure included only those whose value for EDPCT was 50 percent or less.

Monthly loan payment status **ALLOWE2**

This variable describes whether respondents were paying off education loans in 1994, and if not, the reason why not. It was derived from ALLOWE.

Payments required	Respondent was required to make monthly payments.
No payments required	Respondent was not making monthly payments because he/she had already paid back his/her loans or had deferred loan repayment.
No undergraduate debt	Respondent was not making monthly payments because he/she did not take out a loan.

Months of graduate study **ENRLGRAD**

Total number of months of graduate study since bachelor's degree completion. Enrollment may have been full or part time. Graduate study was defined as being in a master's, doctoral, or first professional degree program. Two categories were defined for this report: none; and one or more.

Noneducational expenses **OTHOWE**

Total amount respondent paid each month on mortgage, rent, auto loan, and any other noneducational debt.

This variable was used to compute an average. When this variable was used in a table, the table included only those whose monthly expenses for these items were less than $2,500.

Number of months unemployed **UNEMPMOS**

The variable was created using the monthly employment indicators. "Unemployed" is defined as not working and seeking employment. The variable measures the total number of months unemployed since graduation.

Number of schools accepted **ACCEPTED**

Among respondents who applied to graduate school, the number of schools at which they reported being accepted.

Primary reason for not applying to graduate school **REASNAP**

If the respondent did not apply to graduate or professional school, and had considered it, the respondent indicated the primary reason for not applying from among the following choices:

- Too much undergraduate debt
- Too much other debt
- Not enough financial aid or assistance
- Cost-related (cost too much, not worth it, cannot afford it)

- Personal
  - Wanted to take time off
  - Family responsibilities too demanding
  - Don't like school
  - Location, no school nearby
- Work-related
  - Not necessary for career
  - Working and happy with current job
  - Want work experience before attending
  - Need to work and save money for graduate school
  - Job responsibilities too demanding
- Undecided about what to study
- Other academic
  - Need better grades, scores
  - Missed application or test deadline
  - Graduate school too difficult
- Other reasons

Race–ethnicity RETHNIC

This variable was created by combining two items in which respondents reported their race and whether or not they were of Hispanic origin.

American Indian/Alaskan Native	A person having origins in any of the original peoples of North America and who maintains cultural identification through tribal affiliation or community recognition.
Asian/Pacific Islander	A person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent or Pacific Islands. This includes people from China, Japan, Korea, the Philippine Islands, Samoa, India, and Vietnam.
Black, non-Hispanic	A person having origins in any of the black racial groups of Africa, not of Hispanic origin.
Hispanic	A person of Mexican, Puerto Rican, Cuban, Central or South America or other Spanish culture or origin, regardless of race.
White, non-Hispanic	A person having origins in any of the original peoples of Europe, North Africa, or the Middle East (except those of Hispanic origin).

Reason for saving money SAVING_

Respondents who reported saving money (see entry for "Saving money") were asked to respond yes or no for nine different reasons. This report included those for which more than 10 percent responded "yes."

Purchase of a home	**SAVING01**
Furthering education	**SAVING02**

Retirement	**SAVING04**
Purchase of a vehicle	**SAVING05**
Rainy day	**SAVING08**

Reason for taking April 1994 job **AJOBREAS**

Respondents who said their April 1994 job was not related to their field of study (see "major during last enrollment spell") were asked their main reason for taking the job. Possible responses included:

Only job could find
Pay was better than other job(s)
Held job prior to graduating
Curious about type of work
Better opportunity for advancement
Opportunity to help people/be useful to society
Wanted manual occupation
Other reason

Relationship between April job and degree **AJOBRELT**

Indication of how closely related respondents' primary April 1994 job was to their field of study. See entry for "Annual salary at April 1994 job" for definition of "primary job." Three options were offered: closely related; somewhat related; and not at all related.

Respondent applied to graduate school **EVERAPP**

Indicates whether a respondent ever applied to a graduate school (yes/no).

Saving money **SAVINGS**

Respondents were asked if they were saving money for any reason. Positive values on this variable were used to identify the percentage of respondents who were saving money for any reason.

Time from postsecondary entry to bachelor's degree **BATIME2**

Represents the number of months between the date the respondent began postsecondary education and the date of bachelor's degree receipt. If a respondent was missing either date, BATIME2 was set to missing. In a few cases, the value for BATIME2 was less than 30 months; these cases were excluded. BATIME2 was calculated for only those students receiving their first bachelor's in 1992–93. For this report, three lengths of time were distinguished: 4 years or less; more than 4, up to 6 years; and more than 6 years.

Total undergraduate debt still owed **UNDGROWE**

Respondents who borrowed for their undergraduate education were asked to report the amount they still owed as of interview date.

Where living April 1994 **WHERELIV**

The respondent was asked in what type of housing he/she was living on April 1, 1994. The options provided were: own house or apartment; with parents or relatives; school-owned housing; employer-provided residence; sorority/fraternity house; or other type of housing. For this report, the last four types were grouped into "other."

PART II: BPS VARIABLES

Academic year last enrolled **LASTENR**

The last academic year in which the student was enrolled.

Age when began postsecondary education **AGE8990**

AGE8990 indicates the respondent's age when he or she first began postsecondary education.

Amount owed on student loans **DRVOWEAM**

Amount the student owed on loans borrowed through student loan programs as of spring 1994. The variable was also used as an average.

Average duration of unemployment spells (months) **MEANDUR**

The average number months a respondent's spells of unemployment lasted. This variable was derived by dividing the total number of months a respondent was unemployed by the total number of unemployment spells.

Average monthly loan payment **SFAVGPAY**

For students who reported repaying loans as of spring 1994, the variable represents the average monthly loan payment they had made.

When this variable was used in a table, the table included only those whose educational debt burden was 50 percent or less (see EDPCT).

Borrowed for education **EVERBOR**

Positive values on this variable were used to identify the percentage of students who borrowed from any source, including family or friends, for undergraduate education.

Control of last institution **OFCOLAST**

Control of last institution. Aggregates level and control of institution according to control.

Public	A postsecondary educational institution operated by publicly elected or appointed school officials in which the program and activities are under the control of these officials and that is supported primarily by public funds.
Private, not-for-profit	A postsecondary educational institution that is controlled by an independent governing board and incorporated under Section 501(c)(3) of the Internal Revenue Code.
Private, for-profit	A postsecondary educational institution that is privately owned and operated as a profit-making enterprise. These institutions include career colleges and proprietary institutions.

Debt status in 1994 **DRVOWE**

Positive values on this variable are used to identify students who still owed on a postsecondary student loan (not including loans from family or friends).

Degree working toward in 1989–90 **GOAL89AB**

Type of degree student reported working toward at the institution where he or she was a beginning postsecondary student, and type of institution he or she was attending at the time.

Associate's degree at 2-year	Student was attending a 2-year institution with the objective of earning an associate's degree.
Bachelor's degree at 2-year	Student was attending a 2-year institution with the objective of earning a bachelor's degree.
Bachelor's degree at 4-year	Student was attending a 4-year institution with the objective of attaining a bachelor's degree.
Certificate at private, for-profit	Student was attending a private, for-profit institution with the objective of earning a certificate.
Certificate at public 2-year	Student was attending a public 2-year institution with the objective of earning a certificate.
Other	Student had any other combination of institution type and objective, such as an associate's degree at a 4-year institution.

Earned income in 1993 **SG93EAIN**

Amount of gross 1993 income that was earned, for those who had any earned income in 1993. The variable was also used as an average.

Educational debt burden **EDPCT**

Monthly student loan payments divided by monthly income. See entry for "Average monthly loan payment." Monthly income (MOINC) was calculated by dividing the 1993 earned income (SG93EAIN) by 12. EDPCT was also used as an average. When this variable was used in a table or a figure, the table or figure included only respondents with a value of 50 percent or less on EDPCT.

Employment and enrollment status in April 1994 **M_MNTH51**

Monthly employment and enrollment status indicators were derived from the beginning and ending dates of all jobs and enrollment. Respondents were categorized as: not employed and not enrolled; enrolled and not employed; employed and not enrolled; or employed and enrolled. In this analysis, none were enrolled. Thus, all were in one of two of these categories: employed and not enrolled; or not employed and not enrolled. However, table 5 shows the proportions of those enrolled and not enrolled in the entire BPS sample.

End date of last enrollment spell **ENDTLAST**

Ending date of last spell of enrollment before 1994 interview. For this analysis, only beginning postsecondary students who were not enrolled after December 1992 were included.

Ever unemployed 1989–94 **UNEMPLOY**

Positive values on this variable were used to identify students who reported ever being unemployed between 1989 and 1994. Unemployed is defined as having no job but actively seeking work.

Gender **H_GENDR**

BPS:90/94 respondents were asked their gender only if this information was missing from NPSAS and not obvious during the interview. Respondents were categorized as male or female

Highest degree attained by spring 1994 **DEGALL2**

From 1994 student interview. This variable includes those with incomplete or minimal enrollment data.

None	Respondent had not earned a credential by spring 1994.
Certificate	Respondent's highest degree attained by spring 1994 was a vocational/technical certificate.
Associate's degree	Respondent's highest degree attained by spring 1994 was an associate's degree.
Bachelor's degree	Respondent's highest degree attained by spring 1994 was a bachelor's degree.

When this variable was used as a row, the tables included only those whose last spell of enrollment ended by December 1992 and excluded those who attained a bachelor's degree by that date. In those tables, the variable is labeled "Highest degree attained by December 1992."

Importance of job security and permanence **SCJOBSEC**

Respondents were asked "How important are each of the following incentive factors [in determining the kind of work you plan to be doing for most of your life]?" "Job security and permanence" was one of the listed incentive factors. Respondents answered in one of the following ways: not important; somewhat important; or very important.

Level and control of last institution **OFCOLAST**

Combined level and control of last institution attended. See entries for "Control of last institution" and "Level of last institution." Categories used in this report include: Public 4-year; private, not-for-profit 4-year; public 2-year; private, for profit; and other (public less-than-2-year, private, not-for-profit less-than-2-year, and private, not-for-profit 2- to 3-year).

Level of last institution **OFCOLAST**

Level of the last institution attended.

4-year	An institution that offers 4-year baccalaureate degrees. These institutions may or may not also offer master's, doctoral, or first professional degrees in one or more programs as the highest degree awarded.

2-year	An institution whose program of study results in an award or degree below the baccalaureate level, and is at least 2 years but less than 4 years in duration. These institutions include many community and junior colleges.
Less-than-2-year	An institution whose normal program of study is less than 2 years in duration.

Major during last enrollment spell **MAJLAST**

Students' major field of study during last spell of enrollment in a postsecondary institution.

Business and management	Student majored in business or management.
Engineering, math, or science	Student majored in life or physical sciences, mathematics, computer and information technology, or engineering.
Humanities or social science	Student majored in humanities or social and behavioral sciences.
Education	Student majored in education.
Other	Student majored in health, a vocational/technical area, or another technical/professional field.

Months after leaving PSE before obtained first principal job **TIME2FJ**

Variable represents the number of months between the students' last enrollment and when they obtained their first principal job. Students who obtained a job immediately after postsecondary education were coded as 0. Students who never worked were coded as missing on this variable.

Primary occupation in 1993 **OCCUP93**

Occupational category of principal job in 1993.

Clerical
Craftsman/repair, laborer, or machinist
Manager/administrator
Professional
Sales
Service
Other

Race–ethnicity **BPSRACE**

This variable was created by combining two items in which respondents reported their race (American Indian/Alaskan Native, Asian, black, white, other) and whether or not they were of Hispanic origin. See entry for "Race–ethnicity" in Part I for a more detailed description of race.

Receiving help with payments **SFREHELP**

Positive values on this variable were used to identify students who were receiving help with repaying student loans from parents, relatives, spouse, friends, or employers.

Repayment status in 1994 **REPAY**

Respondents who owed money on student loans were asked in 1994 if they had started repaying any of them (excluding any loans from family or friends). Respondents, including those who had not borrowed, were categorized as either making payments or not making payments.

Socioeconomic status (SES) **SESPERC**

Composite variable combining parents' education and occupation, dependent student's family income, and the existence of a series of material possessions in respondent's home.

Lowest quartile	Socioeconomic status fell at or below the 25th percentile.
Middle quartiles	Socioeconomic status fell between the 25th percentile and the 75th percentile.
Highest quartile	Socioeconomic status fell at or above the 75th percentile.

Student loan amount **DRVBORAM**

Amount the respondent borrowed for his or her education between 1989 and 1994. This variable is based on the 1994 question "What is the total amount of student loans you have taken out so far for your undergraduate education and related expenses? [Do not include loans from parents, relatives, or friends.]" For those who either refused the question or did not know the amount borrowed, data was substituted from the 1992 question "About how much in total have you borrowed to help you with postsecondary education?" Respondents with data from 1992 may have included loans from parents, relatives, or friends in the total they provided. Such respondents make up less than 0.5 percent of all those with responses on this variable.

Student loans **GOTLOAN**

Took out any loans through student loan programs during postsecondary education (excludes loans from family or friends). Respondents were placed in one of two categories: did not take out student loans; and took out student loans.

Positive values on this variable were also used to identify students who received non-family student loans during postsecondary education.

Total months unemployed **TOTDUR**

Variable represents the total number of months the student was ever unemployed between 1989 and 1994. This variable was also used as an average.

Unemployed April 1994 **UNEM9404**

Positive values on this variable are used to identify respondents who were unemployed (not employed but looking for work) in April 1994.

APPENDIX B—TECHNICAL NOTES AND METHODOLOGY

BACCALAUREATE AND BEYOND STUDY

The Baccalaureate and Beyond Longitudinal Study (B&B:93/94) tracks the experiences of a cohort of college graduates who received a bachelor's degree during the 1992–93 academic year. It will document this group's experiences in the areas of further education and degree completion, employment, public service, family formation, and other adult decisions for a period of 12 years. B&B:93/94 will provide data that can be used to assess the outcomes of postsecondary education, including graduate and professional program access, labor market experience, and rates of return on investment in education.

Participants in the 1993 National Postsecondary Student Aid Study (NPSAS:93) who received their bachelor's degree between July 1992 and June 1993 form the base sample for the B&B study. Approximately 12,500 NPSAS:93 respondents were identified as eligible for the first followup survey, which was conducted between July 1993 and December 1994 (roughly one year after participants' graduation). Approximately 1,500 members of this initial sample were determined to be ineligible at the time of the followup interview, and about 900 others were not interviewed (usually because they could not be located or refused to participate), generating a final sample of 10,080 college graduates. An overall response rate of 92 percent was achieved for the first followup. The survey's methodology report provides additional detail on this survey.[1]

NPSAS:93 was the third administration of the National Postsecondary Student Aid Study (earlier administrations were in 1986–87 and 1989–90). NPSAS was designed to include students enrolled in all types of postsecondary education, and includes students in public; private; not-for profit; and private, for-profit institutions at the 4-year, 2-year, and less-than-2-year levels. NPSAS:93 included a stratified sample of approximately 50,000 students (about 90 percent

---

[1] U.S. Department of Education, National Center for Education Statistics, *Baccalaureate and Beyond Longitudinal Study: 1993/94 First Follow-up Methodology Report*, NCES 96-149, by Patricia J. Green, Sharon L. Meyers, Pamela Giese, Joan Law, Howard M. Speizer, and Vicki Staebler Tardino, Paula Knepper, project officer (Washington, DC: 1996).

BEST COPY AVAILABLE

of whom were undergraduates) from about 1,100 institutions. A methodology report with additional information is available.[2] Table B.1 shows the distribution of 1992–93 bachelor's degree recipients according to selected characteristics.

BEGINNING POSTSECONDARY STUDENT LONGITUDINAL STUDY

The Beginning Postsecondary Student Longitudinal Study (BPS) follows NPSAS:90 students who enrolled in postsecondary education for the first time in 1989–90. The first followup was conducted in spring 1992 and the second in spring 1994. Using a Computer Assisted Telephone Interview (CATI), BPS collected information from students on their persistence, progress, and attainment and on their labor force experience. Approximately 8,000 students were included in the BPS sample with an overall response rate of 91 percent. More information on this survey can be found in the associated technical report.[3] Table B.2 shows the distribution of the 1989–90 beginning postsecondary students used in this report according to selected characteristics.

ACCURACY OF ESTIMATES

The statistics in this report are estimates derived from a sample. Two broad categories of error occur in such estimates: sampling and nonsampling errors. Sampling errors occur because observations are made only on samples of students, not on entire populations. Nonsampling errors occur not only in sample surveys but also in complete censuses of entire populations.

Nonsampling errors can be attributed to a number of sources: inability to obtain complete information about all students in all institutions in the sample (some students or institutions refused to participate, or students participated but answered only certain items); ambiguous definitions; differences in interpreting questions; inability or unwillingness to provide correct information; mistakes in recording or coding data; and other errors of collecting, processing, sampling, and imputing missing data.

---

[2] U.S. Department of Education, National Center for Education Statistics, *Methodology Report for the National Postsecondary Student Aid Study, 1992–93*, by John D. Loft, John A. Riccobono, Roy W. Whitmore, Robert A. Fitzgerald, and Lutz K. Berkner, Andrew G. Malizio, project officer (Washington, DC: 1995).

[3] U.S. Department of Education, National Center for Education Statistics, *Beginning Postsecondary Students Longitudinal Study Second Follow-up (BPS:90/94) Final Technical Report,* NCES 96-153, by Daniel J. Pratt, Roy W. Whitmore, Jennifer S. Wine, Karen M. Blackwell, Barbara H. Forsyth, Timothy K. Smith, Elizabeth A. Becker, Kurt J. Veith, Marisa Mitchell, and Gregory D. Borman. Larry G. Bobbitt, project officer (Washington, DC: 1966).

DATA ANALYSIS SYSTEM

The estimates presented in this report were produced using the NCES Data Analysis Systems (DAS) for the Baccalaureate and Beyond Study First Followup (B&B:93/94) and the Beginning Postsecondary Student Longitudinal Study Second Follow-up (BPS:90/94). The DAS software enables users to specify and generate their own tables from the B&S and BPS data. With the DAS, users can re-create or expand upon the tables presented in this report. In addition to the table estimates, the DAS calculates proper standard errors[4] and weighted sample sizes for these estimates. Tables B.3 and B.4 present the standard errors that correspond to the data presented in tables 7 and 9 in the text. If the number of valid cases is too small to produce an estimate, the DAS prints the message "low-N" instead of the estimate.

In addition to tables, the DAS will also produce a correlation matrix of selected variables to be used for linear regression models. Included in the output with the correlation matrix are the design effects (DEFT) for all the variables identified in the matrix. Since statistical procedures generally compute regression coefficients based on simple random sample assumptions, the standard errors must be adjusted with the design effects to take into account the B&B and BPS stratified sampling methods. (See discussion under "Statistical Procedures" below for the adjustment procedure.)

For more information about the NCES B&B and BPS DAS, contact:

Aurora D'Amico
NCES Longitudinal Studies Branch
555 New Jersey Avenue NW
Washington, DC 20208-5652
(202) 219-1365
Internet address: Aurora_D'Amico@ED.GOV

The DAS can be accessed at www.PEDAR-DAS.org.

---

[4] The B&B and BPS samples are not simple random samples, and therefore, simple random sample techniques for estimating sampling error cannot be applied to these data. The DAS takes into account the complexity of the sampling procedures and calculates standard errors appropriate for such samples. The method for computing sampling errors used by the DAS involves approximating the estimator by the linear terms of a Taylor series expansion. This procedure is typically referred to as the Taylor series method.

Table B.1—Percentage distributions of 1992–93 bachelor's degree recipients by selected student characteristics: 1994

	Total
Total	100.0
Gender	
Male	45.3
Female	54.7
Race–ethnicity	
American Indian/Alaskan Native	0.6
Asian/Pacific Islander	4.9
Black, non-Hispanic	6.1
Hispanic	5.1
White, non-Hispanic	83.3
Age received bachelor's degree	
24 or younger	71.7
25–29	12.4
30 or older	16.0
Borrowing for undergraduate education	
Did not borrow	50.7
Borrowed	49.3
Degree-granting institution	
Public 4-year	65.2
Private, not-for-profit 4-year	31.4
Other	3.4
Baccalaureate degree major	
Business and management	22.0
Engineering, math, or science	16.4
Humanities or social science	24.3
Other	37.3
Primary occupation April 1994	
Business and management	20.1
School teacher	11.7
Professional	25.6
Administrative, clerical, support	17.9
Sales, service	11.3
Other	13.4

NOTE: Percentages may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1993 Baccalaureate and Beyond Longitudinal Study First Followup (B&B:93/94), Data Analysis System.

Table B.2—Percentage distributions of 1989–90 beginning postsecondary students whose last enrollment ended by December 1992 according to selected student characteristics: 1994

	Total
Total	100.0
Gender	
Male	45.3
Female	54.7
Race–ethnicity	
American Indian/Alaskan Native	0.6
Asian/Pacific Islander	2.6
Black, non-Hispanic	11.7
Hispanic	8.4
White, non-Hispanic	76.6
Age when began postsecondary education	
19 or younger	55.7
20 or older	44.3
Socioeconomic status	
Lowest quartile	23.8
Middle quartiles	52.1
Highest quartile	24.1
Student loans	
Did not take out student loans	74.7
Took out student loans	25.3
Highest degree attained by December 1992	
None	69.4
Last attended 4-year	22.4
Last attended public 2-year	61.7
Last attended private, for-profit	11.8
Other	4.1
Certificate	21.7
Associate's degree	8.9
Major during last enrollment spell	
Business and management	34.4
Engineering, math, or science	15.1
Humanities or social science	12.3
Education	3.8
Other	34.5
Academic year last enrolled	
1989–90	40.4
1990–91	26.9
1991–92	28.6
1992–93	4.2

Table B.2—Percentage distributions of 1989–90 beginning postsecondary students whose last enrollment ended by December 1992 according to selected student characteristics: 1994—Continued

	Total
Level of last institution	
4-year	17.8
2-year	62.3
Less-than-2-year	19.9
Control of last institution	
Public	72.4
Private, not-for-profit	5.9
Private, for-profit	21.8
Level and control of last institution	
Public 4-year	14.0
Private, not-for-profit 4-year	3.8
Public 2-year	53.8
Private, for-profit	21.8
Other	6.6
Primary occupation in 1993	
Clerical	25.0
Craftsman/repair, laborer, or machinist	19.9
Manager/administrator	16.3
Professional	6.0
Sales	5.6
Service	16.1
Other	11.1

NOTE: Percentages may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1990 Beginning Postsecondary Students Longitudinal Study—Second Follow-up (BPS:90/94), Data Analysis System.

Table B.3—Standard errors for table 7: Percentage of 1992–93 bachelor's degree recipients who were employed and enrolled and percentage distribution according to enrollment and employment status in April 1994, by selected student and institutional characteristics

	Total		Enrollment and employment status			
	Employed	Enrolled	Employed and not enrolled	Employed and enrolled	Enrolled and not employed	Neither employed nor enrolled
Total	0.47	0.53	0.60	0.40	0.35	0.32
Gender						
Male	0.70	0.73	0.83	0.58	0.54	0.45
Female	0.57	0.68	0.79	0.54	0.36	0.44
American Indian/Alaskan Native	5.54	4.03	6.24	3.92	1.49	5.62
Asian/Pacific Islander	2.71	2.63	3.08	1.83	1.98	1.57
Black, non-Hispanic	1.98	1.78	2.39	1.70	0.85	1.82
Hispanic	2.02	2.38	2.60	1.99	1.28	1.78
White, non-Hispanic	0.49	0.56	0.64	0.44	0.35	0.32
Age received bachelor's degree						
24 or younger	0.56	0.61	0.69	0.45	0.41	0.35
25–29	1.03	1.09	1.37	1.03	0.38	0.99
30 or older	1.15	1.20	1.47	1.00	0.71	0.92
Borrowing for undergraduate education						
Did not borrow	0.66	0.72	0.80	0.58	0.50	0.43
Borrowed	0.60	0.67	0.79	0.54	0.38	0.45
Degree-granting institution						
Public 4-year	0.56	0.67	0.74	0.51	0.41	0.39
Private, not-for-profit 4-year	0.90	0.88	1.06	0.65	0.67	0.56
Other	2.68	3.21	3.67	2.65	1.35	2.64
Baccalaureate degree major						
Business and management	0.81	0.97	1.14	0.85	0.48	0.63
Engineering, math, or science	1.24	1.30	1.44	1.03	0.94	0.87
Humanities or social science	0.92	1.00	1.10	0.79	0.62	0.71
Other	0.68	0.79	0.91	0.63	0.46	0.46
Occupation April 1994						
Business and management	0.00	0.84	0.84	0.84	0.00	0.00
School teacher	0.00	1.34	1.34	1.34	0.00	0.00
Professional	0.08	0.88	0.88	0.88	0.00	0.08
Administrative, clerical, support	0.00	1.15	1.15	1.15	0.00	0.00
Sales, service	0.00	1.30	1.30	1.30	0.00	0.00
Other	0.00	1.31	1.31	1.31	0.00	0.00

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1993 Baccalaureate and Beyond Longitudinal Study First Followup (B&B:93/94), Data Analysis System.

Table B.4—Standard errors for table 9: Percentage distribution of 1989–90 beginning postsecondary students who left postsecondary education or attained an associate's degree or certificate by December 1992 according to employment status in April 1994, by selected student and institutional characteristics

	Employed	Not employed
Total	1.29	1.29
Gender		
Male	1.70	1.70
Female	1.89	1.89
Race–ethnicity		
Asian/Pacific Islander	8.64	8.64
Black, non-Hispanic	4.16	4.16
Hispanic	4.62	4.62
White, non-Hispanic	1.45	1.45
Age when began postsecondary education		
19 or younger	1.47	1.47
20 or older	2.14	2.14
Socioeconomic status		
Lowest quartile	2.89	2.89
Middle quartiles	1.60	1.60
Highest quartile	2.47	2.47
Student loans		
Did not take out student loans	1.58	1.58
Took out student loans	1.86	1.86
Highest degree attained by December 1992		
None	1.61	1.61
Last attended 4-year	2.22	2.22
Last attended public 2-year	2.34	2.34
Last attended private, for-profit	4.01	4.01
Certificate	2.83	2.83
Associate's degree	3.29	3.29
Major during last enrollment spell		
Business and management	2.49	2.49
Engineering, math, or science	3.97	3.97
Humanities or social science	3.24	3.24
Education	7.25	7.25
Health or vocational/technical	2.27	2.27

Table B.4—Standard errors for table 9: Percentage distribution of 1989–90 beginning postsecondary students who left postsecondary education or attained an associate's degree or certificate by December 1992 according to employment status in April 1994, by selected student and institutional characteristics—Continued

	Employed	Not employed
Academic year last enrolled		
1989–90	2.05	2.05
1990–91	2.09	2.09
1991–92	2.51	2.51
1992–93	5.57	5.57
Level of last institution		
4-year	2.04	2.04
2-year	1.75	1.75
Less-than-2-year	3.03	3.03
Control of last institution		
Public	1.54	1.54
Private, not-for-profit	2.59	2.59
Private, for-profit	2.59	2.59
Level and control of last institution		
Public 4-year	2.47	2.47
Private, not-for-profit 4-year	3.12	3.12
Public 2-year	1.99	1.99
Private, for-profit	2.59	2.59
Other	4.11	4.11
Primary occupation in 1993		
Clerical	1.98	1.98
Craftsman/repair, laborer, or machinist	2.26	2.26
Manager/administrator	2.24	2.24
Professional	1.47	1.47
Sales	4.68	4.68
Services	1.55	1.55
Other	3.30	3.30

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1990 Beginning Postsecondary Students Longitudinal Study—Second Follow-up (BPS:90/94), Data Analysis System.

BEST COPY AVAILABLE

STATISTICAL PROCEDURES

Two types of statistical procedures were used in this report: testing differences between means, and adjustment of means after controlling for covariation among a group of variables. Each procedure is described below.

Differences Between Means

The descriptive comparisons in this report were tested using Student's *t* statistic. Differences between estimates were tested against the probability of a Type I error, or significance level. The significance levels were determined by calculating the Student's *t* values for the differences between each pair of means or proportions and comparing these with published tables of significance levels for two-tailed hypothesis testing.

Student's *t* values may be computed to test the difference between estimates with the following formula:

$$t = \frac{E_1 - E_2}{\sqrt{se_1^2 + se_2^2}} \qquad (1)$$

where E_1 and E_2 are the estimates to be compared and se_1 and se_2 are their corresponding standard errors. Note that this formula is valid only for independent estimates. When the estimates were not independent (for example, when comparing the percentages across a percentage distribution), a covariance term was added to the denominator of the *t*-test formula.

There are hazards in reporting statistical tests for each comparison. First, comparisons based on large *t* statistics may appear to merit special attention. This can be misleading since the magnitude of the *t* statistic is related not only to the observed differences in means or percentages but also to the number of students in the specific categories used for comparison. Hence, a small difference compared across a large number of students would produce a large *t* statistic.

A second hazard in reporting statistical tests for each comparison occurs when making multiple comparisons among categories of an independent variable. For example, when making paired comparisons among different levels of income, the probability of a Type I error for these comparisons taken as a group is larger than the probability for a single comparison. When more than one difference between groups of related characteristics or "families" are tested for statistical significance, one must apply a standard that assures a level of significance for all of those comparisons taken together.

Comparisons were made in this report only when $p \leq .05/k$ for a particular pairwise comparison, where that comparison was one of k tests within a family. This guarantees both that the individual comparison would have $p \leq .05$ and that for k comparisons within a family of possible comparisons, the significance level for all the comparisons will sum to $p \leq .05$.[5]

For example, in comparing the percentages of males and females who were enrolled in postsecondary education only one comparison is possible (males versus females). In this family, $k=1$, and the comparison can be evaluated without adjusting the significance level. When students are divided into five racial–ethnic groups and comparisons between all five groups are possible, then $k=10$ and the significance level of each test must be $p \leq .05/10$, or $p \leq .005$. The formula for calculating family size (k) is as follows:

$$k = \frac{j(j-1)}{2} \qquad (2)$$

where j is the number of categories for the variable being tested. In the case of race–ethnicity, there are five racial–ethnic groups (Native American /Alaskan Native; Asian/Pacific Islander black non-Hispanic; Hispanic; and white, non-Hispanic). Thus, when substituting 5 for j in equation 2, one gets the following formula:

$$k = \frac{5(5-1)}{2} = 10$$

Adjustment of Means

Tabular results are limited by sample size when attempting to control for additional factors that may account for the differences observed between two variables. For example, when examining the percentages of those who were continuously employed, it is impossible to know to what extent the observed variation is due to SES differences and to what extent it is due to differences in other factors related to SES, such academic ability, race–ethnicity, and so on. However, if a nested table were produced showing SES according to levels of academic ability by race–ethnicity, the cell sizes would be too small to identify the patterns. When the sample size becomes too small to support controls for another level of variation, one must use other methods to take such variation into account.

---

[5] The standard that $p \leq .05/k$ for each comparison is more stringent than the criterion that the significance level of the comparisons should sum to $p \leq .05$. For tables showing the t statistic required to ensure that $p \leq .05/k$ for a particular family size and degrees of freedom, see Olive Jean Dunn, "Multiple Comparisons Among Means," *Journal of the American Statistical Association* 56: 52–64.

To overcome this difficulty, multiple linear regression was used to obtain means that were adjusted for covariation among a list of control variables. Adjusted means for subgroups were obtained by regressing the dependent variable on a set of descriptive variables such as gender, race–ethnicity, SES, and so on. Substituting ones or zeros for the subgroup characteristic(s) of interest and the mean proportions for the other variables results in an estimate of the adjusted proportion for the specified subgroup, holding all other variables constant. For example, consider a hypothetical case in which two variables, age and gender, are used to describe an outcome *Y* (such as completing a degree). The variables age and gender are recoded into a dummy variable representing age and a dummy variable representing gender:

Age	*A*
24 years or older	1
Under 24 years old	0

and

Gender	*G*
Female	1
Male	0

The following regression equation is then estimated from the correlation matrix output from the DAS:

$$\hat{Y} = a + \beta_1 A + \beta_2 G \qquad (3)$$

To estimate the adjusted mean for any subgroup evaluated at the mean of all other variables, one substitutes the appropriate values for that subgroup's dummy variables (1 or 0) and the mean for the dummy variable(s) representing all other subgroups. For example, suppose we had a case where *Y* was being described by age (*A*) and gender (*G*), coded as shown above, and the means for *A* and *G* are as follows:

Variable	Mean
A	0.355
G	0.521

Suppose the regression equation results in the following equation:

$$\hat{Y} = 0.15 + (0.17)A + (0.01)G \qquad (4)$$

To estimate the adjusted value for older students, one substitutes the appropriate parameter values into equation 3.

Variable	Parameter	Value
a	0.15	—
A	0.17	1.000
G	0.01	0.521

This results in the following equation:

$$\hat{Y} = 0.15 + (0.17)(1) + (0.01)(0.521) = 0.325 \qquad (5)$$

In this case, the adjusted mean for older students is 0.325 and represents the expected outcome for older students who resemble the average student across the other variables (in this example, gender).

It is relatively straightforward to produce a multivariate model using B&B and BPS data, since one of the output options of the DAS is a correlation matrix, computed using pairwise missing values.[6] This matrix can be used by most commercial regression packages as the input data to produce least-squares regression estimates of the parameters. That was the general approach used for this report, with two additional adjustments described below to incorporate the complex sample design into the statistical significance tests of the parameter estimates.

Most commercial regression packages assume simple random sampling when computing standard errors of parameter estimates. Because of the complex sampling design used for the B&B and BPS survey, this assumption is incorrect. One can get a better approximation of its standard errors by multiplying each standard error by the average design effect of the dependent variable (DEFT),[7] where the DEFT is the ratio of the true standard error to the standard error computed under the assumption of simple random sampling. It is calculated by the DAS and produced with the correlation matrix.

---

[6] Although the DAS simplifies the process of making regression models, it also limits the range of models. Analysts who wish to use a procedure other than pairwise treatment of missing values or to estimate probit/logit models can apply for a restricted data license from NCES.

[7] The adjustment procedure and its limitations are described in *Analysis of Complex Surveys*, C.J. Skinner, D. Holt, and T.M.F. Smith, eds. (New York: John Wiley & Sons, 1989).

•U.S. GOVERNMENT PRINTING OFFICE:1997-429-422/80017

90000

9 780160 491795

United States
Department of Education
Washington, DC 20208–5652

Official Business
Penalty for Private Use, $300

Postage and Fees Paid
U.S. Department of Education
Permit No. G–17

Standard Mail (A)